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THE UNIVERSITY OF ALBERTA

THE DEVELOPMENT OF A CHILDREN'S IRRATIONAL
IDEAS INVENTORY

by



MARILYN MURRAY HALLETT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
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THE UNIVERSITY OF ALBERTA
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Date ..October 14/77.....

ABSTRACT

The theory and research of Albert Ellis and Maxie Maultsby in Rational Emotive Therapy and Rational Behavior Therapy respectively, provide the framework for the following investigation.

The main objective of this study was to create an irrational ideas inventory for use with young children. Items from Zingle's I-I Inventory (1965), Davies A-I-I Inventory (1970), and Knaus' Survey of Rational Concepts (1974), were selected to comprise a 49-item Children's Irrational Ideas Inventory.

An initial 46-item version was prepared and administered to one grade four class in the Edmonton Public School System. On the basis of results from this pilot study, two items were discarded and five additional items replaced the deleted statements. The final 49-item version was subjected to validation procedures involving 367 subjects.

Reliability estimates resulting from a test-retest procedure (.80) and the Kuder-Richardson 20 formula (.80) indicate an acceptable degree of test consistency.

A construct validation network was set out, wherein relationships between the concept of irrationality and a number of testable psychological constructs were examined. The hypotheses generated were based upon prior research and a knowledge of pertinent literature in the realm of Rational Emotive Therapy or Rational Behavior Therapy.

The C-I-I Inventory was administered to students and was used in conjunction with a Personal Data Checklist and a Teacher Checklist Rating Student Social and Emotional Behavior within the classroom.

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Scores obtained from the C-I-I Inventory were used along with information accumulated by the above sources, in carrying out the statistical analyses.

A series of correlations were obtained with respect to C-I-I Inventory scores and such variables as sex, academic achievement, verbal IQ, family status, self-concept, and socio-economic prestige of the family. The findings are as follows: (a) there is a significant relationship between sex and scores obtained on the C-I-I Inventory, with females scoring higher; (b) there is a significant relationship between self-concept and scores obtained on the C-I-I Inventory, with children experiencing poor self-concepts scoring higher; (c) there is a significant relationship between academic underachievement and scores obtained on the C-I-I Inventory, with children performing in accordance with their intellectual capacities scoring lower; (d) there is a significant relationship between verbal IQ and scores obtained on the C-I-I Inventory, with children of higher verbal IQ's scoring lower; (e) there is a significant relationship between children residing in one parent or two parent families and scores obtained on the C-I-I Inventory, with children in one parent families scoring higher; (f) there is a significant relationship between socio-economic status and scores obtained on the C-I-I Inventory, with children of families rated as being of higher socio-economic status scoring lower; (g) there is a significant relationship between the number of siblings within a family system and scores obtained on the C-I-I Inventory, with children having more siblings scoring higher.

Findings were interpreted as evidence that the Children's

Irrational Ideas Inventory is a valid and reliable measure of irrational thinking in young children. Implications were explored for use of the C-I-I Inventory in detecting emotional problems and specific irrational beliefs from which a child may be operating to maintain emotional disturbance; in one-to-one and group counselling situations; and with parent groups and in the classroom as part of developmental programming.

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"And the child looked up...", a poem by Sharon Harr.

And the child looked up
and saw all the beauty
around him.
He saw the trees and the flowers,
the loved and the happy.
And he said
this is good.

And the child looked down
and he saw all the ugliness
around him.
He saw poverty and the waste,
the evil and the hatred.
And he said
this is bad.

And he combined these things,
the beauty and the ugly,
the good and the bad.
And he said
this is life.

Sharon Harr

Parts of the world are beautiful,
and parts of it are ugly, but you are
free to spend your energies concentrating
on any aspect of it you choose. I invite
you to own that choice.

W. W. Broadbent

CHAPTER I

INTRODUCTION TO THE STUDY

All things rational start with objective reality. One objective reality is that human beings are inclined to unwittingly practice numerous irrational beliefs and attitudes which result in self-defeating feelings and behaviors. Cudney (1975), states that our culture is a seedbed for self-defeating behavior patterns which are exemplified in the following:

Typical self defeating behaviors include people trying to force themselves to be perfect, putting things off which are important to their 'own best interests,' holding negative and unrealistic views of themselves, and feeling and behaving in inferior ways. It is not uncommon for people to restrict their growth by compulsive behaviors, nor is it uncommon for people to weigh themselves down with guilt and unrealistic expectations. Lots of people in our country alienate themselves from themselves, from other people, and from all of life. Many people also practice depression, worry, prejudice, withdrawal, dependency, boredom and the like. Similarly many people shut themselves off from the full use of their minds and thus create psychosomatic illness, maintain negativism, hostility, and defensiveness and keep confidence in themselves at a low ebb. The list goes on and on. (p. 1)

Man has achieved much success in the scientific and technological arenas, yet has remained remarkably naive in terms of solving emotional problems. "In spite of amazing progress in other areas, he is still not appreciably more emotionally mature, stable and happy than he was in past centuries. Indeed he is in some ways more childish, emotionally uncontrolled and mentally ill than ever" (Ellis & Harper, 1974, p. 18).

How can man learn to eliminate irrational thoughts and

behaviors which detract from the joy of living? It would seem that greater strides need to be made in mental health education, so that people might acquire the necessary skills to cope with stresses concomitant to our highly complex society.

Ideally, a research proven, short term method of teaching emotional health which provides long term results, would be most beneficial. A multitude of theories toward this end have been propounded by numerous individuals concerned with achieving optimum mental health. Rational Emotive Therapy (RET, Ellis, 1962) and Rational Behavior Therapy (RBT, Maultsby, 1967) are two virtually identical strategies which teach people how to solve emotional problems quickly and efficiently with little or no outside professional assistance. Based on Albert Ellis' eleven irrational ideas, RET and RBT aim to eradicate emotional disturbance by teaching individuals how to find their irrational attitudes or beliefs which are causing disturbance, and then teaching the means whereby these illogical ideas can be challenged and disputed. Once the irrationality is challenged, the individual is taught to provide rational alternatives to replace the self-defeating beliefs previously held.

Drawing upon his many years of clinical experience, Albert Ellis proposed that a high endorsement of certain values or ideas common to our culture seemed to inevitably lead to widespread neurosis (MacDonald & Games, 1972). Empirical testing of Ellis' proposal, by means of designing and administering Irrational Ideas (I-I) Inventories to various populations, made it feasible to measure these major illogical beliefs in our society. Inventories used in determining degrees

of irrational thinking, were also seen to be valuable tools in identifying persons whose self-defeating self-talk caused them to function at less than peak efficiency in many aspects of their personal, occupational and social life. Several researchers have built instruments to objectively measure irrational thinking as set forth by Ellis; however, the majority of these inventories are for use with adults or adolescents. Inventories designed for the express purpose of measuring irrationality in children are indeed limited. (A discussion of the purposes and design of irrational ideas inventories developed to date will be dealt with in Chapter 11.)

Purpose of the Present Study

At this time, there does not appear to be an Irrational Ideas Inventory for use with young children. The primary focus of this study therefore, was to create a reliable and valid inventory to measure irrational thinking in elementary school aged children. Construct validation of the Children's Irrational Ideas (C-I-I) Inventory was simultaneously examined through hypotheses generated in consideration of the related theory accumulated to date. Empirical study of hypotheses suggesting a correlation between scores obtained on the C-I-I Inventory and school achievement, sex, family status, verbal IQ, socio-economic prestige of the family and negative social and emotional behaviors displayed by children within the classroom situation, was also examined.

A review of related research amassed to date indicates that study in this area has been largely devoted to adults and adolescents,

and their respective irrational thoughts, feelings and behaviors. Attention should perhaps now be directed to assisting children in the identification of specific irrational beliefs which they consistently use to create and maintain their emotional disturbance. If it is possible to predict emotional disturbance as a result of high scores obtained on an Irrational Ideas Inventory (Zingle, 1965; Hartman, 1968; Davies, 1970; Maultsby, 1971; Ross, 1977) then teachers, parents, and counselors could be alerted to specific illogical beliefs operating in the child. Administration of a valid and reliable Children's Irrational Ideas Inventory could be very useful in identifying those children who hold and practice in large measure these self-defeating beliefs. Steps could then be taken to help children acquire the problem solving skills and the critical thinking necessary to eliminate irrational cognitive, emotive, and physical behaviors which are seen to hinder school performance and enjoyment obtained from satisfying interpersonal relationships.

Because the child is a thinking, feeling and acting being, all these aspects of his development must be taken into account in a holistic approach to education. As Zingle (1972) points out, the feelings and thoughts which accompany learning have a significant effect on the results. If a child has positive thoughts and feelings, he tends to be motivated toward the task, participates with a high degree of involvement, and is more likely to derive permanent gains from his efforts. Conversely, if his thoughts and feelings are negative, he is poorly motivated, participates on a minimal basis, and is less likely to derive permanent gains from his efforts.

Therefore, in order to achieve the primary goals of the educational experience, we can best reach children through a cognitive-emotive scheme whereby a positive rational outlook is adopted towards self and learning in general. Overall knowledge of the specific irrational beliefs which seemingly operate in elementary school aged children would be most helpful in utilizing the classroom situation to challenge illogical reasoning in all areas of living and learning.

Our school systems, being geared to a cognitive orientation of learning, are directly in line with the cognitive-emotive-behavioristic model set forth by Albert Ellis in the 1950's. Ellis (1962, 1965, 1971) and Ellis and Harper (1961) in fact vehemently support the application of this logico-empirical theory to the school room, conducting an experiment in emotional education through establishment of the Living School in 1969. Further to this, Maultsby (1974), Maultsby, Knipping and Carpenter (1974), Maultsby, Costello and Carpenter (1975), and Knipping, Maultsby and Thompson (1976) provide evidence of how students have been successfully taught within the classroom setting to analyze and challenge their own irrational thinking, thereby becoming 'therapists' in maintaining their own positive mental health.

Where Do Irrational Ideas Come From?

Previous studies conducted by anthropologists and sociologists, indicate that all societies directly and indirectly teach their members to believe many senseless, irrational ideas (Young, 1961; Kranzler, 1974). It is evident that many of the irrational beliefs,

which individuals maintain, stem from attitudes acquired when they were young, and it is equally evident that they often perpetuate illogical thinking into their adult lives. Impressionable during these formative years, children tend to believe almost everything 'others' tell them, because they have not been taught basic skills in selecting only sensible or 'rational' thoughts. Ellis and Harper (1961) suggest that children almost routinely make false assumptions about themselves and the universe. Children are very good observers, but are poor evaluators of situations and/or events, and therefore often make inaccurate evaluations of what they perceive.

The alleviation or removal of 'irrational' tendencies is not very practical until the child learns the use of language. Because we tend to 'feel' the way we 'think,' and because we think with an internal language, or 'self-talk,' it is at this point where children are shown the irrationalities of their inwardly subjective belief systems. Ellis and Harper (1974), suggest that once a child begins to verbalize his attitudes toward himself and the world, the adults around him can effectively show him by their teachings and their own behavior how to modify and improve his internalized philosophies of life, so that he can become, while still a child, much less neurotic.

Initially, people generally resist the idea that irrational attitudes and beliefs are learned and that they maintain their own undesirable emotional habits by continually reindoctrinating themselves with self-defeating thoughts. Maultsby (1974) states that people tend to prefer to blame their parents, others and society for causing their emotional ills. Our language is rich with statements

placing blame or responsibility for disturbing or negative happenings on 'others,' 'institutions,' or 'the society as a whole.' Comments such as "She frustrated me," "The teacher made me angry," "They forced me into it," are all too often utilized to escape responsibility for owning one's thoughts and actions. Broadbent (1976) writes that "our language has a built-in escape hatch that permits us to duck out of our responsibility when we are faced with a more seedy side of our behavior" (p. 115). Today's young are particularly notable for this tendency.

Why is it important to look at preventive measures in dealing with irrational thinking during the elementary school years? During early childhood, the extinction of irrational thought can be accomplished with more ease, because learned behavior patterns and ideas have not yet become firmly entrenched. Kagan and Moss (1962) are staunch advocates of the importance of cognitive, social, and emotional development during the primary years. Their findings have shown that many of the behaviors exhibited by a child between six and ten years of age were moderately good predictors of related behavior in early adulthood. If educators and therapists have a positive influence on 'helping' children acquire rational attitudes and values in the elementary grades, then it should follow that we should see many more rational and happy adolescents and adults. The school years then, are seen to be a most practical time in which to reach and teach the young how best to solve intra- and inter-personal conflicts instead of waiting until emotional problems reach emergency proportions and all that is left is 'picking up the pieces.'

Summary

In summary, the present study seeks to fill a gap in research related to the measurement of irrational thinking in young children. A review of inventories constructed to date, supports the need for a valid, reliable instrument appropriate for use with young subjects. The study also seeks to provide construct validity of the C-I-I Inventory through empirical testing of hypotheses to determine whether correlations exist between scores on the C-I-I Inventory and such variables as sex, school achievement, socio-economic prestige of the family, verbal IQ, and family status.

Research indicates that irrational ideas create and sustain emotional disturbance; therefore it would be helpful to have a means of detecting an inclination towards irrationality during the formative years. Psychologists, counselors, and educators have in recent years become more cognizant of the need for developmental programs to equip children with skills for more effective and joyful living. Since emotional disturbance hinders the joy of living, it seems that if it is possible to discover the presence of irrationality in children, positive intervention could be made in challenging and replacing illogical thinking with more rational beliefs and behaviors. The present study also seeks to gain an indication of the overall degree of irrational thinking present in young children as well as delineating the most commonly held irrational beliefs evident in children at the grade four level. Knowledge of the above might be beneficial in setting out experiences whereby children can gain insight into the irrationalities of certain ideas and thus practice more reasonable

thoughts and actions when they come upon similar situations in the future. The classroom as well as the home environment could be enriched if teachers, parents, and children consistently practiced rational thoughts, feelings, and behaviors.

CHAPTER II

SUMMARY OF RELATED THEORY AND RESEARCH

Overview

The mid 1950's witnessed the beginnings of Rational Emotive Therapy (RET), an educative, self-help approach enabling people experiencing emotional turmoil to help themselves. Designed by Albert Ellis, RET is based upon observations of human emotions made more than 2000 years ago, by a famous Greek Stoic philosopher. Epictetus wrote that "men are disturbed not by things but by the view which they take of them." This proposes that facts or events do not upset people, but rather people upset themselves with irrational beliefs and illogical perceptions which they generate about specific facts or events in their lives. In other words, people do not feel happy or unhappy as a function of external events, but rather as a result of their perceptions of and reaction to these events.

In order to more fully understand Ellis' theory, it is imperative to consider his view of man. Man, he states, is a highly complex thinking and emoting being, possessing inherent biological and sociological tendencies to engage in irrational thought and action (Ellis, 1962). Ellis also sees man as highly 'suggestible' and thus readily indoctrinated with irrational or erroneous beliefs common to the culture (Ellis, 1958). After initial indoctrination, individuals tend to reindoctrinate themselves over and over with the original taboos, superstitions, and irrationalities often acquired during

childhood. Reindoctrination, done consciously or unconsciously, is manifested through self-talk and self-evaluation. One has only to pause momentarily to consider the amount of time spent in conversation with oneself 'directing,' 'chastizing,' 'criticizing,' 'praising,' 'scolding,' 'shoulding,' and 'musting.' If an individual is inclined towards erroneous or illogical views of himself and/or others, he could, through the course of his extensive self-communication, continually focus upon 'awful,' 'terrible,' and 'horrible' thoughts which Ellis contends are the root cause of emotional discomfort.

RET concentrates upon the individual's self-talk and aims to assist individuals in correcting faulty self-communication which is seen to create and maintain negative emotions. Ellis emphasizes that self-defeating beliefs perpetuated through self-talk may lead individuals to behave inappropriately. RET further places with the individual the ultimate choice of being happy and enjoying life to the fullest, or being unhappy, depressed, or anxious. As Ellis sees it, the individual controls his own emotional fate. Emotional fate is determined by the modes and patterns of either rational or irrational thinking which the individual chooses for himself. According to Ellis, individuals experiencing negative feelings for the majority of their waking hours are reinforcing themselves continually with mistaken or invalid beliefs. It is Ellis' (1973) contention that emotional upsets, as distinguished from feelings of sorrow, regret, annoyance, and frustration, are caused by the individual's irrational attitudes and beliefs, and that these beliefs are irrational, because they 'magically' insist that something in the universe SHOULD, OUGHT, or MUST be

different from the way it indubitably is. Instead of accepting responsibility for one's thoughts, feelings and actions, individuals often blame 'others' because things are not the way they should or ought to be. Ellis (1962) and Maultsby (1975) suggest that clinging to such irrational notions only serves to foster or maintain self-defeating behaviors. Proponents of RET and RBT stress the beneficial results that come from teaching people that they make choices for themselves, and must, as a result, be prepared to be responsible for those choices.

One of the decidedly beneficial aspects of this therapy is that it deals primarily with the 'here and now'; that is, the thoughts and perceptions that are currently causing and sustaining the emotional upset. Ellis (1962) utilizes logic and reason to help facilitate the challenging of illogical beliefs. Essentially, the rational emotive therapist acts much like a lawyer in logically presenting objective facts to the individual, and challenging and providing constant proof to corroborate the irrationality of some fact or event. A 'directive' stance is maintained with the client in helping him acquire more rational modes of thinking and behaving. Through a rational analysis of a disturbing situation, the individual becomes much more cognizant of whether his thoughts and actions are objective and realistic. Similarly, the individual gains insight into the irrational beliefs he utilizes to maintain emotional upset.

Central to a clear understanding of how human beings practice irrational thinking is a knowledge of the anatomy of an emotion and how the brain operates. Ellis (1962) and Maultsby (1967) have expounded upon how the brain, acting as both a computer and camera,

exerts control over how we feel. Maultsby (1975), refers to two basic components or systems central to 'thinking' which trigger ideas and stimulate emotional action and reaction. First, the neocortex, or thinking part of the brain does not distinguish between 'healthy' or rational thoughts, and 'unhealthy' or irrational thoughts. For this reason, the brain is said to act like a 'lousy' camera. Direction of the brain in choosing rational and irrational thoughts therefore rests with the individual. Maultsby (1975) makes the point that if the brain is not directed carefully, it will form mental images using impulses from memory and the imagination. These mental images conjured by the brain's camera could be mistaken, nonsensical attitudes which could result in much emotional dissonance.

A second part of the brain is the feeling system, or as it is technically termed, the limbic system, which forces the individual to have emotional feelings, but allows him to choose the ones he prefers. In other words, human beings choose their emotional feelings by their choice of thoughts. Maultsby (1975) states:

If you are having undesirable emotions, that usually means you are making irrational choices of thoughts. But that doesn't prove that you want to feel bad. Instead it probably means that for as long as you can remember, you have always thought the way you think about yourself and the world. Because of that, you learned the strong emotional feelings you now have. (p. 19)

The prime intent of Rational Emotive Therapy, then, is to teach individuals to accurately direct their brain to experience the external world more in line with objective reality.

The A B C D E Paradigm of Emotions

The process of changing irrational beliefs begins with an understanding of the A B C paradigm of human emotions, and how self-talk triggers both emotional feelings and physical actions. Ellis (1962) set out the following method of analyzing emotions. 'A' refers to facts or events which have occurred. This includes the perceptions of the facts and events believed to be involved in a personal experience. Perceptions include what is seen, heard, and/or physically felt. Self-talk is reflected in the 'B' section, which deals with conscious thoughts, as well as beliefs and attitudes the person feels about 'A.' 'C' represents the emotional consequences of 'B'; that is, the feelings or emotions we have about the situation 'A.' Many people believe that 'A' causes 'C,' however in reality, it is 'B' which causes 'C.' Through self-talk, irrational attitudes and beliefs are generated which directly result in undesirable emotional or behavioral responses at 'C.'

Maultsby (1967) expanded upon Ellis' original model, particularly with respect to the 'D' section which seeks to ardently 'attack' and 'replace' illogical self-talk, with more rational and reasonable statements. Debating each self-talk within the 'B' section allows the individual to determine whether in fact he is thinking and behaving in a truly rational manner. To facilitate rational behavior, Maultsby (1975) developed five criteria for rational thinking. In order to be considered 'rational,' three of the following five criteria must be met. They are as follows:

1. It is based on objective reality or the known relevant facts

of a life situation;

2. it enables people to protect their lives and/or health;
3. it enables people to achieve their goals most quickly;
4. it enables people to keep out of significant troubles with other people (trouble they do not want); and
5. it enables people to prevent and quickly eliminate significant personal emotional conflict. (Maultsby, 1975, p. 14)

The 'D' section then, introduces the concept of rational self-mastery, whereby irrational self-statements failing to meet at least three of the above five criteria for rational thinking are specifically challenged. Maultsby and Hendricks (1974), state that "once the individual realizes he holds an irrational belief, and understands and agrees with a rational alternative, the most rational thing to do is to give up the irrational belief as quickly as possible" (p. 109).

Relinquishing irrational beliefs leads to the 'E' section in the analysis of human emotions, wherein future emotional goals of the individual are established. Ultimately, most individuals would like to feel 'calm,' 'content,' and 'happy.' Rational thinking ultimately leads to emotions and behaviors in line with these emotional goals.

In summary, rational therapy is a process whereby individuals come to feel more of the feelings they enjoy and like to feel, and less of those feelings which are painful and detract from the joy of living. A highly structured and workable theory, RET enables individuals to examine the logic of their belief systems to determine which irrational attitudes and beliefs are causing them unhappiness.

Evaluation of the Relationship between
Logic, Language, and Maladjustment

A historical perspective of the relationship between man's misuse of language and logic can be traced to some observations and subsequent writings made by philosophers such as Aristotle some 2300 years ago. Korzybski (1933) states that the grammar and logic of our present language dates back to this pre-scientific orientation, which for today is no longer sound or appropriate. Our language is founded upon ill-fitting logic and assumptions which are no longer valid in light of all the knowledge amassed to date. Man still, however, consciously or unconsciously employs this antiquated reasoning to disturb or upset himself. The basic tenets of Rational Therapy rest upon the idea that man upsets himself by irrational self-talk based upon illogical beliefs. To understand more clearly how and why man upsets himself, it is helpful to examine three laws formulated by Aristotle, which have had considerable impact upon our civilization. Johnson (1946) states "taken together, these laws constitute the basic mold in which men have shaped all their reactions" (p. 8). Briefly, the laws are as follows:

1. The law of identity, that is, a thing is what it is, or A is A, man is man, success is success, good is good, bad is bad, and so on. Korzybski (1933) refers to assumptions such as this as "identifications" or the classification of individuals as being all one thing or the other, that is, 'rude,' 'lazy,' 'sloppy,' 'selfish,' or 'polite.' To illustrate the irrationality of classifying people as being all one way or the other Payne (1971) writes: "If someone says

he is egocentric, is this term characteristic of his behavior, holding for all times, or is it merely that he has behaved in his own self-interest at certain times, in certain places, in certain situations" (p. 29). Human beings do not equal their behavior. Yet, all too often individuals hold this illogical belief and as a result upset themselves. Labels can have powerful psychological effects particularly if an individual believes that he is equal to his behavior (He = his behavior). While behavior can be rated or labeled, human beings can not be rated as 'good' or 'bad.' We as human beings are not equal to one behavior. We are much more. We are the sum total of all our behaviors, thoughts and feelings; some of which are positive, and some of which are negative. However no one behavior, no matter how honorable or despicable, equals our worthwhileness as human beings.

2. The law of the excluded middle, that is, facts or events are viewed in an 'either-or' fashion. In other words, there is no 'in between' state, as the middle portion of the continuum is eliminated. The individual therefore views facts, events, or people as either 'all good,' 'all bad,' 'all successful,' or 'totally unsuccessful.' Payne (1971) suggests that "allness" is another prescientific way of thinking. "Language neatly packages the flowing field of events in which we are immersed; yet change is the rule of living. If we package our thinking and our behavior in accordance with the static, fixed terms of language rather than with the changing world, then sooner or later we will be shocked, hurt or surprised" (p. 27). Johnson (1946) speaks to this point and suggests that "the assumption that there is something that is 'success' requires the further assumption

that all other things are 'failure'; and so the bedeviled individual reduces himself to only two alternatives, the one to be cherished and the other to be abhorred" (p. 10).

3. The law of non-contradiction, that is, something cannot be both 'A' and 'non-A' at the same time. In line with this reasoning then, if an individual fails at some specific task, he could not simultaneously be regarded as 'successful' or 'worthwhile' as a human being. The faulty reasoning here is obvious; however, human beings in their irrationality do not pause long enough to fully consider the harmfulness in holding this assumption. Korzybski (1933) calls this error "two-valued" logic because it implies that 'if I'm not the best, then I'm no good.'

Today we still evidence in large measure, beliefs and attitudes likened to the 'either-or,' A is A philosophy set forth by Aristotle. Many of Ellis' irrational beliefs in fact reflect the three laws, particularly those having to do with perfectionistic strivings, the attainment of unrealistic goals, and the rating of people and situations as either all good or all bad.

Traditionally, man has been known to unquestioningly adopt attitudes, rules, beliefs and values, without giving due thought to their validity. Johnson (1946) states that "on the whole, once we have adopted a belief, we give particular attention to cases that seem to support it, and we ignore or belittle other cases" (p. 26). Attitudes, beliefs, customs and prejudices central to one's environment are seen to be directly responsible for maladjustive behavior.

Ellis (1962) identified eleven irrational beliefs common to

our society and which Tosi (1974) and Knaus (1974) suggest are particularly noticeable in our youth. This thesis focuses upon elementary school aged children and for this reason a listing of the major irrational ideas will be presented in a context relative to how they may view and practice these beliefs.

Ellis' Eleven Irrational Beliefs

Irrational Idea One

It is a dire necessity to be loved by everyone for everything one does.

This irrational idea is indeed prevalent among both young and old alike, and possibly for this reason it is readily perpetuated among the generations. Children particularly, believe in the absolute need for love and approval from peers, teachers, and parents. Children learn to associate love and approval with feeling good about themselves. All too often children measure themselves and others according to what appears to be a very simplistic formula: Love and Approval = Personal Worth. If children are not approved of by significant others or by their peers, they often consider themselves 'losers.' Tenaciously holding to this belief would make it very difficult for the child to be himself. In order to be loved and approved of by all others, the child would not actually be free to be himself, for he would be constantly striving to receive acceptance, attention, and approval from others. Pursuing this end would hinder the achievement of his own sense of self, as he would continually be concerned with what others were thinking and feeling, rather than with what he thinks, feels, and believes about himself.

Irrational Idea Two

The idea that one should be thoroughly competent, adequate and achieving in all possible respects if one is to consider oneself worthwhile.

Perfectionistic and unrealistic attitudes are similarly rooted in this illogical idea. We live in a fast paced 'get ahead' society, where worth is all too often judged by status and competency. The idea that it is not 'what you are' but 'who you are' is reiterated and reinforced often in a child's world. Children often feel pressured to 'make it' and to 'be successful,' and thus they acquire the notion that worth is judged by one's performance, status, or abilities. If one is not always successful and totally competent, then one is not worth very much. However, COMPETENCY AND ADEQUACY $\neq$ A WORTHWHILE PERSON. An obsession with this belief may often block success which might have been possible had the child not been so anxious and upset over the possibility of not being able to obtain some goal. Self-talk such as 'what will the teacher think if I fail,' 'my parents will be so disappointed if I do not succeed' are common internal verbalizations made by youngsters who believe the notion that they must be competent to be acceptable to themselves and others. Goodman and Maultsby (1974) provide a succinct challenge in helping children with this irrational notion when they state 'There's no such thing as a failure. There are only people who have failed at one thing or another.'

Irrational Idea Three

The idea that certain people are bad, wicked or villainous and that they should be severely blamed and punished for their villainy.

Although youth today generally are more accepting and tolerant

of 'others,' there is still a tendency to globally rate people as 'good' or 'bad,' rather than considering the total traits and characteristics that make up the person. Society through its rhetoric, continues to support the notion that I = my behavior. Statements such as 'he's a bad boy,' or 'she's a selfish child,' are indicative of rating the individual and not the behavior. Individuals do not equal their behavior (INDIVIDUALS $\neq$ THEIR BEHAVIOR). This is an important insight enabling children to not only think more rationally about the behaviors of others but also of themselves. While behaviors can be rated as good or bad, 'people' cannot be rated, and therefore it is irrational to judge people as wicked or villainous. As human beings we all are fallible. From the instant of birth until the time we die, we will make mistakes and that is one certainty of which we can be sure. Logically, individuals who commit unacceptable acts do so out of ignorance, stupidity or emotional disturbance, and therefore it is senseless to blame people for such conduct. Punitively punishing or blaming people for their sorry behavior has often the effect of increasing their misconduct (Hauck, 1967). Implications for parents and teachers have been widely presented by Driekurs (1971), Gordon (1970, 1975) and Ginott (1965) who suggest that separating a child's behavior from the child, is the best means of teaching right from wrong without destroying the spirit and inner feeling of the child.

Irrational Idea Four

The idea that it is awful and catastrophic when things are not the way one would very much like them to be.

The belief that it is terrible or catastrophic when one does

not get what one wants out of life seems to be held by an overwhelming majority of children, youth, and adults (Tosi, 1974). People often upset themselves by thinking how unfair it is when things do not go their way. Feelings of anxiety, anger, hostility, depression or self pity, are often created when individuals demand, whine or insist that things should be 'their' way. When an individual chooses an irrational way of life and significantly keeps defeating his 'own best interests' and/or keeps antisocially sabotaging the interests of others, he usually is doing so because of some kind of childish demandingness (Ellis, 1974). According to rational theory, everything is always as it should be under the circumstances now. Clinging to this subjective view of the world causes upset because the individual is engaging in a form of 'magical thinking,' such that if they want something, they deserve to have or to get what they want. Rationally, it is helpful to understand 'cause and effect' in terms of the idea that if the necessary prerequisites are in evidence, then we should get what we expect because everything was there for something to occur.

Many children are raised in less than favorable situations; however, the ultimate choice rests with them, as to whether to feel depressed and angry because things are not the way they would like them to be. Children, through their experiences, can be helped to know what they can change, and to accept what they cannot. Human beings cannot change anyone but themselves. Ellis and Harper (1974) suggest that even though one has been frustrated in one's attempts to achieve certain goals in life, frustration will rarely kill or defeat one unless one allows it to do so.

Irrational Idea Five

The idea that human unhappiness is externally caused and that people have little or no ability to control their sorrows or disturbances.

Today there is an unusually strong tendency for unhappy persons to ascribe the cause of their unhappiness to other persons, institutions, or events (Tosi, 1974). Psychologically, individuals often blame 'others,' or 'it' for their problems. Common expressions such as 'it made me mad,' 'she hurt me,' 'the world is against me' are utterances of the belief that some magical, external force is directing one's life. In fact, we all control our happiness or unhappiness by our thoughts. No person, institution, or event can cause us to be upset or happy. We do it ourselves through beliefs evidenced in our internal talk. A direct example of this might be when a child falls on the floor and the parent replies "oh dear! the floor hit you" (meaning 'it' hit you). The child is learning that some external force caused him to feel hurt. This is faulty learning which often occurs in childhood, as the child is not shown, and does not comprehend cause and effect. Through the years of childhood, lots of 'pseudo evidence' is presented to children, whereby they believe that 'it' or 'they' caused them to feel a certain way. Care-takers of children can show the child that if they lose their balance they will probably fall. The child learns that for me to fall, all the necessary prerequisites must have been met, and I did the falling. Helping children realize their own self-mastery, will instill in them a sense of how they can direct their own emotional fate.

Irrational Idea Six

The idea that if something is or may be dangerous or fearsome one should be terribly concerned about it and should keep dwelling on the possibility of its occurring.

Children are reared in a society in which anxiety and worry are prevalent. Children often worry about doing well in school and whether or not they will be accepted by others. Generally a great deal of time and energy is expended in this activity as individuals feel that if they worry they will somehow prevent a 'dreaded happening.' This belief is a direct result of 'magical thinking' or superstition. Maultsby (1971a) states that people unwittingly teach themselves to act 'as if' they believe that worry about the possibility of an undesirable event is the main thing that keeps it from happening. Generally, irrational thinkers do not pause to act in response to the probability as opposed to the possibility of some event happening. Reasoning in this vein can demonstrate the futility of worry. During childhood, children are often left with the impression that their parents have power to make anything alright and thus are omnipotent in controlling external events. Rationally, children can be taught that many events are beyond one's control. Worrying about the possibility of some occurrence is useless because worry serves only as a 'magical' attempt to help oneself, without really helping oneself.

Irrational Idea Seven

The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities.

Ellis and Harper (1961) suggest that evading life's difficulties and self-responsibilities tends to result, in the long run, in

less rewarding activities and decreased self-acceptance. Human beings are fallible and one aspect of their fallibility is a normal biological tendency to resist constructive or reasonable actions. Children often complain within the school setting of not wanting to deal with exams, or having to go to school, and in essence they think someone is forcing them into these situations. If they can be shown that they do in fact have the choice of going to school or not going to school and realize that with any choice there are resultant consequences, they can look at what is in their best interests. Avoiding responsibility or not studying for an exam is not always in one's best interest in achieving immediate and long term goals. Children can gain this insight if they realize the long range benefits of dealing with present responsibilities.

Irrational Idea Eight

The idea that one should be dependent on others and needs someone stronger than oneself on whom to rely.

Initially children are reliant upon parental figures for the basic necessities of life, however this dependence should weaken as the child matures and assumes responsibilities for his own thoughts and behaviors. Taking risks is a part of living, and children can learn by experiencing situations wherein they can make decisions and incur the consequences of their actions. Depending on others is an abdication of one's responsibility to and for one's own thoughts, feelings and behaviors.

Irrational Idea Nine

The idea that one's past history is an all important determiner of one's present behavior and that because something once strongly affected one's life, it should indefinitely have a similar effect.

Objective reality is that we live here and now, and one's past experience is only helpful in so far as one learns and grows from previous practice. We cannot affect our past; however, we can control our future behavior, and this is a premise upon which rational theory is based. Children can be taught that although they cannot change events which have already happened to them, they can change the way they feel about them at present. This is an important insight, for the child can envision how he can direct his life and can control how he thinks and feels about his experience. Because something once had a strong impact on one's life, it does not mean that the individual is powerless to intervene and make a 'course' correction.

Irrational Idea Ten

The idea that one should become quite upset over other people's problems and disturbances.

Becoming upset over the behavior of others, suggests that one can somehow exert control over another individual. This is a false notion. While it is possible to influence others, it is not rational to believe one can control or exert power over the thoughts and behaviors of another person. Tosi (1974) reiterates that becoming needlessly upset and concerned about people and events can easily keep one from focusing upon one's own growth and development. It is easy to avoid one's own concerns by becoming preoccupied with the lives of others. The beauty of rational theory lies in the fact that we do not

have to wait for others to change before we can feel happy, because within the individual rests the power to change and direct one's own life.

Irrational Idea Eleven

The idea that there is invariably a right, precise and perfect solution to human problems and that it is catastrophic if this perfect solution is not found.

As fallible human beings, it is inevitable that errors in judgement and action will be made in dealing with problems. However to err is human and mistake making is not related to one's inherent worth as a human being. Problems often do not have perfect solutions and therefore striving for the one correct answer is not always a rational goal. Essentially it is more rational to teach children that many issues are solved by compromise. Flexibility and creativity in thought and action are rational modes of problem solving.

Researchers working in a variety of clinical and educational settings have devised instruments to measure the eleven irrational beliefs just presented. The following synopsis of inventories constructed to date, demonstrates the need for a Children's Irrational Ideas (C-I-I) Inventory for measuring these self-defeating beliefs operating in the young.

Irrational Ideas Inventories Constructed to Date

Zigle (1965) pioneered efforts in designing an Irrational Ideas (I-I) Inventory for the express purpose of measuring irrational thinking in high school students. The I-I Inventory consists of 122

items so written, to be appropriate to the age and maturity level of secondary school students.

Statements included in the inventory were also selected to represent underlying irrational attitudes or beliefs as set out by Ellis. Response 'sets' were avoided by wording some items so that agreement was sometimes rational and sometimes irrational. A five-point Likert-type scale was utilized to obtain responses ranging from strongly agree to strongly disagree. Research conducted with the I-I Inventory has shown it to be a reliable instrument (test-retest reliability of .80 over a five week period) in determining the extent of irrational thinking. Subsequent studies carried out by Zingle (1965), Conklin (1965), and Taft (1968), have supported the construct validity of this instrument.

Davies (1970) formulated the Adult Irrational Ideas (A-I-I) Inventory to similarly test the eleven irrational ideas of Ellis. The final version of the A-I-I Inventory consists of 60 items which were selected from Zingle's I-I Inventory and adapted for use with older subjects. Revisions were made with care, so as not to change the basic intent of the original statements. A five-point Likert-type scale was similarly employed with statements being worded such that strong agreement was sometimes very rational and sometimes very irrational. Reliability estimates yielded correlation coefficients of between .767 and .779.

Hartman (1968) built the Personal Belief Inventory (PBI), a self-administering, objectively scored, diagnostic instrument to measure levels of irrational thinking in college aged students.

Comprised of 60 items, the PBI utilizes a Likert scale, having a maximum score of 300 and minimum score of 60. The higher the individual's score, the greater the degree of irrational thinking present. One criticism aimed at this inventory is that all items are positively stated, and as Davies (1970) suggests, individuals possessing an agreement response set would obtain a very rational score. Similarly, individuals disposed to marking socially acceptable answers would likely agree with many of these items. Even though high reliability coefficients resulted from the statistical operations of test-retest and split half, the construction procedures utilized in designing this inventory are in direct opposition to appropriate psychometric practices.

Maultsby (1971a) designed the Your Irrational Personal Trait Inventory Scale (YIPTIS), which was produced after five years of clinical testing. YIPTIS contains 137 items apportioned to three distinct sections measuring: common perceptions, common beliefs, and common personality traits. The 137 statements presented, represent 'self-talk' expressed in three different ways; that is, as a perception, as a belief, and as a trait. In formulating the inventory, Maultsby carefully selected the most common irrational personality traits, which through clinical experience he has found to account for unhappiness in the daily lives of normal people. Again, as in other such inventories, a Likert-type scale is used and subjects are instructed to respond according to what is most appropriate to their usual state of mind and perception system. Total scores are obtained by summing weights for each item. Maultsby (1971a) indicates that

unhappiness in living will rarely be significant if the individual possesses a valid YIPTIS score of 111. The YIPTIS has been successfully employed by Maultsby in his clinical practice in helping people diminish their disturbance created as a result of practicing irrational beliefs and attitudes. The design, content, and word usage of the YIPTIS makes it an instrument for use primarily with adults.

Ross (1977) formulated the Irrational Personality Trait Inventory (IPTIS—Revised) which is an adaptation of Maultsby's YIPTIS. The IPTIS contains 52 items selected to assess the degree to which high school students hold irrational beliefs and perceptions about themselves and others. Items selected for inclusion in the revised inventory had to consistently indicate good psychometric characteristics; that is, an item remainder correlation greater than .40 as evidenced from a stratified sample of high school students ($n = 419$) and another group of high school students ($n = 216$). Ross (1977) reports a high internal consistency (Cronbach's $\alpha = .95$) in this instrument.

A summary of research on the IPTIS—Revised, provided via a letter from Ross (1977), clearly presents evidence of concurrent validity by moderate to high correlations with the Spielberger Test Anxiety Scale ($r = .58$), the Nowicki-Strickland Locus of Control Scale ($r = .39$), the Spielberger Trait Anxiety Scale ($r = .67$) and the Ross Student Needs Questionnaire ($r = .48$) as calculated from the response of a stratified random sample of 373 high school students. Correlations obtained were reported to be slightly higher for females. Further to this, Ross writes:

Factor analytic studies indicate that the major portion of the variance on the scale is accounted for by two factors. One factor appears to be an irrational perception of oneself. The second factor appears to be an irrational dependency on other people and external conditions for one's emotional well being.

Inventories aimed at measuring irrational thinking in children are indeed scant. Knaus (1974) is one of the few who has undertaken any research with children, and along with his effort in this area he formulated two Children's Surveys of Rational Beliefs (CSRB) Form B and C, for children of seven to ten years of age and ten to thirteen years of age respectively. Both forms of the CSRB use a multiple choice format, wherein a statement of a situation or event is followed by either three or four possible reactions or responses. The child is instructed to choose the answer which he believes to be best for him. These particular scales are aimed at discerning specific rational beliefs and practices that the child is evidencing at the time of testing. Knaus is very much involved in Rational Emotive Education (REE) in the elementary grades, and he views such surveys as a valuable means of ascertaining whether the child has, as a result of re-education, incorporated more rational beliefs and attitudes into his overall Belief System. While the scale is useful in measuring the extent to which the child is practicing rational thinking, it does not adequately survey the 'basic' irrational beliefs set down by Ellis. It is difficult to discern from this particular survey, the irrational attitudes from which a child is operating to maintain emotional disturbances.

The foregoing survey suggests a lack of appropriate instrumentation for detecting irrational thinking in young children. It was

for this reason that the author proposed to create a valid and reliable Children's Irrational Ideas (C-I-I) Inventory. An intensive study of the related literature served to provide a framework for the design of a C-I-I Inventory as well as providing the necessary background to empirically test the construct validity of the C-I-I Inventory.

A number of prominent cognitive, emotive, and behavioral theorists have examined the inter-relationship between (a) man's semantic environment, (b) man's evaluative reactions to his world, and (c) man's corresponding physiological and overt behaviors (Johnson, 1946) and as a result, adhere to the view that man's misuse of language and reasoning is responsible for much of the emotional disturbance experienced. A review of theories indicating support of the basic tenets of rational emotive theory follows.

Relationship Between Ellis' Theory and Other Similar Theories

A survey of various theories propounded by numerous psychologists, psychiatrists and clinicians, provides credence to the basic philosophy of rational therapy. Meichenbaum (1971) has shown historically, that there are a considerable number of therapies which focus upon belief systems and self-verbalizations.

DuBois (1909) employed a 'cognitive' therapy called "rational persuasion," based upon the principle that incorrect ideas cause emotional maladjustment. The aim of therapy was to change misconceived ideas by pointing out the absurdity of certain illogical beliefs. Adler (1930) and DuBois (1909) both state that neurotic

symptoms develop as a result of mistaken ideas that have crept into the individual's thinking. Essentially maladjusted individuals need assistance in gaining insight into their irrational beliefs so that they can begin a transformation with a new cognitive outlook on facts or events in their lives.

For Adler (1930), mistaken beliefs acquired in childhood were the direct cause of disturbance. Individuals, he suggests often encounter emotional turmoil, because they are unaware of certain mistaken ideas which they perpetuate to sustain self-defeating behaviors. Bringing irrational notions to a 'conscious' level is the first step in gaining a more rational cognitive outlook. Dreikurs (1961) writing on the work of Adler, indicates how false assumptions cause disturbance. "He (the patient), needs our help to see what he is doing and to free himself from his false assumptions. In other words, our treatment is not directed towards change in emotions, but a clarification of cognitive processes, or concepts" (p. 79).

Another theory supportive of rational therapy is that of Combs and Snygg (1959) who suggest that false and misleading notions about oneself cause emotional disturbance. A comprehensive study of the 'phenomenal self' or 'self-concept,' resulted in the view that inappropriate or maladaptive behavior ensues when an individual's self-concept is unaligned with external reality. External or objective reality is based on what is true. Mistaken ideas are inaccurate and thus not true. Assistance is provided to the individual in helping him become aware of inaccurate and illogical self-statements he has been making and believing about himself. As with the theory of Ellis

(1962), Combs and Snygg similarly view verbalization of illogical beliefs as the means whereby self-defeating feelings and behaviors are maintained.

There have been many theorists who have chosen to examine the relationship between the content of self-verbalizations and the creation and maintenance of emotional disturbance. Shaffer (1947), for example, defined therapy as a learning process through which a person acquires an ability to speak to himself in appropriate ways so as to control his own conduct. Developmentally, Vygotsky (1962) has suggested that the internalization of verbal commands is a critical step in the child's development of voluntary control of his behavior. Thus Vygotsky views "thought as inner speech."

Luria (1966) states that the acquisition of a belief system is an integral part of speech. Luria and Yudovitch (1959) similarly suggest that speech, the basic means of communication, becomes as the child develops, a means of deeper analysis and synthesis of reality and, more fundamentally important, a 'higher regulator of human behavior.' Data from numerous studies (Bem, 1974; Klein, 1963; Kohlberg et al., 1968; Lovaas, 1964; Luria, 1959, 1961; Meichenbaum & Goodman, 1969a, 1969b, 1971) also substantiate the role of inner speech in guiding behavior. Meichenbaum and Goodman (1971) state that

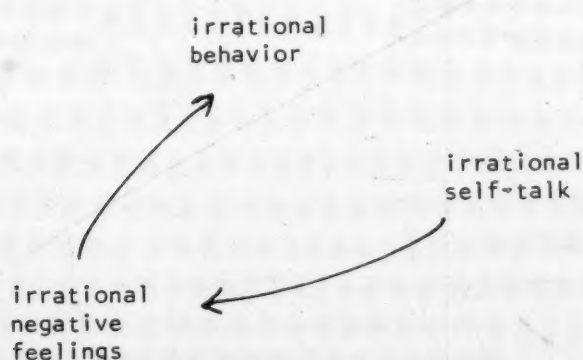
early in development, the speech of others, usually adults, mainly controls and directs a child's behavior; somewhat later, the child's own overt speech becomes an effective regulator of his behavior; and still later, the child's covert or inner speech can assume a regulatory role. (p. 116)

Dollard and Miller (1950) maintain that the words and

sentences a person thinks to himself have a strong motivating effect. The thoughts an individual entertains about a fact or event, directly affects the emotional consequences he will experience. An example in support of this concept is provided by the above researchers, who suggest that thinking about an insult can make one angry. The ongoing self-talk when thinking about being insulted determines the amount of disturbance felt within the situation. Self-talk can be of a nature that the individual will evaluate the fact or event relatively positively, relatively negatively, or relatively neutrally. The individual can make himself happy or miserable depending upon the nature and content of his internal speech. Ruchmick (1936) and Hunt, Cole, and Reis (1958) have reported in a similar vein that cognitive factors are major determinants of emotional states.

From personal experience during confinement in Auschwitz, Viktor Frankl (1959) writes of how he chose to maintain his sanity by the attitudes and beliefs he held regarding his survival. "A human being by the very attitude he chooses is capable of finding and fulfilling meaning in even a hopeless situation" (Frankl, 1969, p. 75). Frankl's self-talk during a long imprisonment kept him sane and alive. Essentially, he chose to practice rational thoughts and behaviors which directly followed the criteria established by Maultsby (1975). Frankl's thoughts, feelings, and behaviors were rational in that they were obviously based upon the objective reality of his situation. Similarly they were directed at protecting and preserving his life and health; they sought to achieve his goal of remaining alive; and they kept him out of significant conflict with

the guards and/or Gestapo. Within his formal writing, Frankl (1959) reiterates his belief that there should be a defocusing on all vicious feedback mechanisms that play such a great role in the development of neuroses. Irrational self-talk can indeed be a part of a vicious cycle wherein an individual can continually reinforce negative self-defeating thoughts, which can produce irrational feelings, which in turn give rise to irrational behaviors.



Ellis (1962) and Maultsby (1975) firmly believe in the self-determining potential of mankind. Frankl similarly supports this belief: "Things determine each other, but man is ultimately self-determining" (p. 212). Man chooses by his thoughts, whether to be happy or sad, dependent or independent, loving or unloving.

Rollo May (1953) further substantiates the view that man's attitudes are all important in determining feelings and behaviors pertinent to a specific event. He writes: "Through his power to survey his life, man can transcend the immediate events which determine him. Whether he has tuberculosis or is a slave like the Roman philosopher Epictetus or is a prisoner condemned to death, he can

still in his freedom choose how he will relate to these facts" (p. 164). Man has the freedom to choose how he will view facts or events and the choice of attitudes he holds and practices will determine resultant feelings and behaviors.

Adler (1927) writes that "everyone determines how and what he will experience. In our daily life we observe people drawing whatever conclusions they desire from their experience" (p. 56). One's perception of a situation, therefore, can be either subjective or objective depending upon the self-talk in evidence at the time. Self-talk is a very 'individual' type of communication, which is the reason why no two people will experience exactly the same thoughts or feelings about a particular event. Britt (1949) similarly states that one's beliefs regulate actions and experiences. "If people believe things to be true, they they are true for them and have social consequence" (p. 178).

Steiner (1974) in his extensive writings on script theory states that people make conscious life plans in childhood or early adolescence which influence and make predictable, the rest of their lives. Scripts assumed and followed by individuals can be rational and self-enhancing or they can be basically irrational and thus self-defeating. This notion is supportive of Ellis' view that attitudes and beliefs acquired in childhood can effect the overall happiness or unhappiness experienced. Like Ellis, Steiner stresses that emotional difficulties arise when individuals ultimately burden themselves with 'injunctions' and 'attributions' acquired in childhood. Language and thoughts reflecting 'shoulds,' 'oughts,' 'musts,' 'don't be happy,'

'don't think,' or 'don't be' suggest stipulations to the individual's very existence.

Further support of a rational-emotive or cognitive-emotive theory of psychotherapy is provided by Rotter (1954) and Kelly (1955) in their individual theories of personality founded upon the idea that "erroneous expectations" or "disorder constructs" are responsible for emotional maladjustment. Arnold (1970) has similarly suggested that most of today's theories of feeling and emotion focus upon the individual's unique evaluation, interpretation or appraisal of facts or events that have occurred. Lazarus, Averill and Opton (1970) define appraisal as a process whereby the individual cognitively filters stimulus information. The resulting appraisal determines whether the situation is evaluated as relevant, threatening, or frustrating. They also state that cognitive processes create the emotional response and shape it into recognizable affect. It would seem to follow then, that if cognition creates and maintains emotions and feelings, then therapists might well use the cognitive processes to challenge and eliminate those misconceptions which are sustaining disturbance.

Schachter (1971) also supports the idea that if therapists can help individuals to perceive or evaluate differently those situations which produce disruptive feelings and emotions, then their emotional health will be improved. In other words, the most efficient way to change maladaptive behavior is to sever the link existing between maladaptive cognition and ensuing maladaptive emotion and/or behavior.

The work of Festinger (1957) in the area of cognitive dissonance, stresses several elements supportive of rational therapy. Festinger states that there is consistency between what a person knows or believes and what he does. Attitudes, beliefs, or opinions are thus a motivating force for action which can create either consonance or dissonance within the individual, depending upon whether the action compliments the belief. If, for example, a child believes that he is only worthwhile if he is completely competent in all he does, he will in all likelihood be motivated to behave in ways so as to experience acceptance of himself because of his perfectionism. Obtaining acceptance and reinforcement of his 'worthwhileness,' will result in cognitive consonance. If however, the child encounters a situation in which he does not attain excellence, he will likely upset himself and encounter cognitive dissonance. When dissonance or cognitive conflict is overwhelming, the individual is often motivated to find a more satisfying approach to his dilemma. Maultsby (1975) defines 'significant' conflict as that amount of conflict or trouble which the individual does not want to have and will act to avoid. The need to reduce dissonance, or 'significant' conflict is often the turning point whereby some fundamental changes in belief systems occur, enabling more logical, rational action in the future. To this end, Festinger (1957) states that persons often have cognitive elements which deviate markedly from reality and that the reality impinging on the individual will exert pressures in the direction of bringing the appropriate cognitive elements into correspondence with reality. Significant dissonance therefore is often the impetus for change in

beliefs based upon objective reality. Acquiring more logical or rational beliefs is seen by Festinger as a means of modifying behavior and feelings.

Rokeach (1960) also sees a basic unity between belief and thought, suggesting that if we know something about the way a person believes, it is possible to predict the manner in which he may go about solving all sorts of emotional and intellectual problems. Emotion and cognition are seen to be interrelated, in that every emotion has its cognitive counterpart (Rokeach, 1960). Cognitive activities such as thinking and perceiving involve the use of an internal language or self-talk through which beliefs are perpetuated. Positive, negative, or neutral feelings result from the content of one's internal language.

Horney's (1937) study of the 'neurotic personality of our time' further substantiates the idea that misconceived ideas or attitudes contribute to feelings of anxiety and hostility. Horney advocated five categories of illogical attitudes which are very similar to Ellis' (1962) listing of irrational beliefs. The following analysis seeks to show a connection between Ellis' irrational beliefs and four of Horney's relevant attitudes:

1. attitudes concerning the giving and getting of affection are reflected in the neurotic's excessive need for and dependence upon the approval and affection of others. Ellis' Irrational Ideas 1, 4, 5, and 8 would be placed within this category.
2. attitudes concerning the evaluation of the self as reflected in feelings of inferiority, inadequacy, incompetency, unattractiveness and stupidity. Ellis' Irrational Idea 2 might be categorized in this manner.
3. attitudes concerning self-assertion as reflected in many inhibitions an individual may exhibit with respect to standing up for their 'rights,' making decisions and forming

opinions. Ellis' Irrational Ideas 6 and 7 fall within this realm.

4. attitudes concerning aggression—as evidenced in behaviors indicated through a belief that the whole world is 'down' on them or as exhibited in aggressive, domineering and 'finding' fault as kinds of behaviors. Ellis' Irrational Idea 3 would be descriptive of this attitude.

For a good portion of their waking hours, human beings carry on 'internal dialogues' wherein thoughts, emotions, and overt behaviors are evaluated. The preceding survey of theories postulated by various cognitive, emotive and behavioral researchers, underscores the importance of self-verbalizations in directing behavior. Attitudes and beliefs perpetuated through self-talk can result in either adaptive or maladaptive behaviors, depending upon the rationality or irrationality inherent in the individual's belief system. At times, individuals react to events in very inappropriate ways. Upon examining their overall belief system and the content of their self-talk, it becomes apparent that they have perceived and interpreted facts or events incorrectly. Interpreting situations inaccurately means that the individual did not consider whether his appraisal was in line with objective reality. Inaccurate interpretation of facts or events constitute cognitive distortion which in turn is seen to form the core of emotional disturbance.

A review of pertinent research concerned with changing irrational beliefs, thereby modifying the individual's self-talk, will be explored in the following section. Empirical testing of a variety of cognitive and behavioral approaches to establishing adaptive behaviors will also be presented.

Related Research

Pertinent research in rational therapy can essentially be divided into two categories. One area of study deals with whether self-verbalizations do in fact exert control over the way people think, feel, and behave. The other category of study is concerned with direct attempts at modifying behavior with RBT techniques. While there is considerable theoretical evidence providing support in the aforementioned areas, the majority of subjects utilized in the studies have been adolescents or adults. There is a somewhat more limited amount of data available in the area of children's irrational thinking and the resulting behavioral consequences. What follows will be a review of relevant literature supporting the efficacy of a rational emotive approach indicating where possible, findings directly applicable to children.

Self-talk as a Regulator of Human Behavior

First, with reference to the effects of self-verbalizations on behavior, Rimm and Litvak (1969), conducted a study with normal college students to determine whether different kinds of self-talk would elicit corresponding emotional arousal. The sample was divided equally so that one group of students were directed to read silently, statements such as: "My grades may not be good enough this semester . . . I might fail out of school and that would be awful." Ellis (1962, 1971) advocates that irrational self-statements such as these, lead to maladaptive behavior.

The other group within the sample read 'neutral' type

statements such as: "Edison was an inventor; therefore he was imaginative." The content of these statements contains neutral affect and therefore would not presumably elicit any form of disturbance. As might be expected, students in the first or experimental group evidenced significantly more emotional arousal (as measured by respiratory changes) than did the control group, reading more neutral statements. The conclusion reached by these researchers was that the content of 'self-verbalizations' directly affects emotional arousal. Related studies by May and Johnson (1973) and Russell and Brandsma (1974) using heart rate and respiration and galvanic skin conductance respectively, substantiate the idea that changes in body state occurred as a result of the affective content of internally evoked self-talk.

Ellis (1962) maintains that human beings have the propensity to think illogically and as a result of holding irrational beliefs, will experience varying degrees of emotional upset. Goldfried, Decenteco, and Weinberg (1974) suggest that the specific irrational beliefs an individual holds, become over a period of time, well-learned 'mental sets,' through which the individual approaches many life situations. Goldfried and Sobocinski (1975) responding to the above assumption state that "people who maintain certain irrational beliefs tend to make covert verbalizations in certain situations that cause them to respond emotionally. To the extent that individuals maintain certain expectancies that are not consistent with the real status of the world around them, they are more likely to experience disappointment and become upset" (p. 505). Two experiments were jointly conducted by

Goldfried and Sobocinski (1975) to examine the relationship between Ellis' Irrational Belief #1 and emotional arousal, and secondly to carry out a correlational study between a measure of irrational beliefs and various paper and pencil measures of interpersonal, examination and public speaking anxiety. Results of the first experiment showed that individuals who strongly believed and practiced the irrational belief that it is a dire necessity to be loved and approved of by all 'others,' evidenced greater emotional arousal (anxiety and hostility) when placed in imaginal situations in which there might be some tendency to perceive social rejection (Goldfried & Sobocinski, 1975). The second portion of the experiment provided support for the idea that the tendency to hold a high degree of irrational beliefs (as measured by: The Irrational Beliefs Test (Jones, 1968); The Social Avoidance and Distress Scale (Watson & Friend, 1969); The Fear of Negative Evaluation Scale (Watson & Friend, 1969); and the Achievement Anxiety Test (Alpert & Haber, 1960)) is positively correlated with various forms of social-evaluative anxiety; namely, social, speech, and test anxiety.

Through childhood learning, individuals tend to misinterpret or improperly evaluate situations repeatedly, and thus reindoctrinate and reinforce themselves over and over with irrational thoughts. When the individual approaches similar situations at some further date, he will in all likelihood respond irrationally just as a matter of course. Singer and Schacter (1962) view cognition and 'internal speech' as the "steering mechanism" whereby emotional and behavioral consequences are determined. "Cognitions arising from the immediate situation as

interpreted by past experience provide the framework within which one understands and labels his feelings. It is the cognitions which determine whether the state of physiological arousal will be labeled as 'anger,' 'joy,' 'fear,' or whatever" (Singer & Schacter, 1962, p. 380).

Studies conducted by Meichenbaum (1971a) and Michenbaum and Goodman (1969b) provide further information with respect to the influence of self-talk in regulating behavior in children. They found that children who exhibited impulsivity while problem solving tended to engage in less verbal self-regulatory speech, than other children who were less impulsive as they problem solved. Speech, be it overt or covert, is as Vygotsky (1962) and Luria (1959) suggest a 'regulator of behavior.' These findings along with results of Velten (1968) and Loeb, Beck, Diggory, and Tuthill (1967) corroborate the view that cognitive activities in the form of self-talk, exert a definite influence on behavior.

Di Giuseppe (1975), studying the use of behavioral principles in modifying irrational self-statements in children, suggests that behavior is changed by altering the covert cognitions or private speech which precedes the irrational behavior. Techniques of modeling, fading and reinforcement have been successfully utilized to elicit more rational self-talk in children. Initially the child is asked to explain or describe the 'A' or the activating event and the ensuing emotional consequences at 'C.' A brief explanation of the anatomy of an emotion is provided so the child understands that he is upsetting himself by his self-talk, or what he is telling himself about 'A.'

A role play experience is provided with the therapist taking the part of the child. Rational self-statements however are introduced by the therapist to replace the irrational self-talk the child was evidencing to produce the upset. The modeling of appropriate rational statements has been very effective in many specific situations with children.

Di Giuseppe however cites an inherent weakness in this approach, that of generalizing rational self-statements from one situation to another. Children therefore can learn to apply rational thinking to a particular situation, but find it difficult to apply rational principles to contrasting facts or events.

De Voge (1974) similarly supports the effectiveness of behavior modification techniques as a means of establishing rational self-talk in disturbed children. Children learn their attitudes from the 'significant others' in their lives. If these significant others hold many irrational beliefs it is likely that the child will internalize and practice thoughts in tune with these erroneous beliefs.

In line with the premise set forth by De Voge (1974), Meichenbaum (1971) supports the view that children who are strongly and consistently rewarded for verbal expressions of rational thinking gain more control of their behavior than those who do not receive reinforcement. Children between the ages of 8-13 years who were patients in a State Hospital served as the subjects for De Voge's study. Randomly assigned to one of two groups, children in Group A were reinforced only for a particular type of rational verbalization, while those in Group B were reinforced no matter how rational or irrational their verbalizations. Following four weeks of bi-weekly meetings, Group A

showed less inclination to become upset by frustrations, personal rejection, and to failures. Group B children, on the other hand, still became upset, depressed, destructive, or withdrawn in dealing with an unpleasant fact or event. Findings from this study suggest that children can learn more self-controlled behavior by having rational beliefs and thoughts consistently reinforced by the 'significant others' in their environment.

Meichenbaum (1971b) cites successful use of operant and aversive conditioning, modeling, and desensitization techniques with 'neurotics' who have a preponderance of self-statements which they continually employ to produce emotional upset. Ellis (1973) also supports operant conditioning or re-conditioning of the individuals' cognitions and not just changing their behaviors. Training procedures work at helping these individuals gain insight into their defeating self-statements and teaching them to verbalize logical or rational statements in place of irrational behaviors.

In therapy sessions, Meichenbaum (1972b) effectively demonstrated training schizophrenic patients to use only 'healthy talk' or rational statements during the interview sessions. The effect of this operant training generalized such that the patients instructed themselves to give "healthy talk, be coherent and relevant." As with impulsive children who have been shown to lack self-statements or exhibit less cognitive control over their motor behaviors, schizophrenics can also be operantly trained to be more rationally directive in thought and behavior. Thus re-education, in the form of more rational thinking, can be effectively undertaken to improve a variety

of maladaptive behaviors due either to the absence of any directive self-statement or due to an excess of inappropriate self-statements. Ellis (1971b, 1972a, 1972b), Maultsby (1974) and Knaus (1974) are further advocates of the valuable results of emotional re-education. Emotional re-education is a comprehensive program of training the brain new habits of thinking and feeling and thus behaving. Gaining intellectual insight into the need for directive rational self-statements, combined with correct, consistent practice of rational self-talk, will result in emotional health.

Further support of a cognitive-behavioral approach in teaching people to become more self-accepting, self-confident, and independently thinking beings, is presented by Kimmel (1976). In a study conducted with a ten-year old child, rejected by her schoolmates, Kimmel utilized the shaping and fading techniques of Meichenbaum (1971), the role play and modeling strategies of DiGiuseppe (1975), and the 'barb' techniques of Kaufman and Wagner (1972) to comprise a comprehensive and successful therapy. In changing irrational thoughts and behaviors, it is often necessary to not only change the irrational sentences which maintain the disturbance, but also to reinforce and shape covert behavior towards the desired ends. Role play of stressful situations enables the child to react 'as if' facing disparaging remarks. Reinforcement for rational statements provides the practice and instills a feeling of confidence, that it is possible to control one's own feelings and behaviors by the choice of thoughts.

The 'barb' technique (Kaufman & Wagner, 1972) is described as the systematic representation of verbal stimuli selected to evoke

emotional and temperamental reactions. The therapist, parent, counsellor or whatever would thus introduce a 'barb' ~~and~~ have a child react to it, thus providing practice in handling an 'attack' rationally. After 10 sessions, Kimmel (1976) reports that a combined 'rational barb' and a behavior modification approach provided the powerful and rapid means of acquiring social skills, and in helping the child acquire objective reality of the world.

Test Anxiety and Irrational Thinking

Rational emotive therapy has been successfully utilized in reducing test anxiety in students (Warren, Deffenbacher, Brading, 1976; Oliver, 1975; Sharma, 1970). Evidence that test anxious students actively reiterate negative sentences to themselves which distract them from the task at hand, have been reported by Sarason (1973), Mandler and Watson, (1966), Wine (1971), Meichenbaum (1972a). Test anxiety is generally experienced as an inability to think clearly in spite of adequate preparation, and is usually independent of a realistic appraisal of one's abilities (Oliver, 1975). Self-defeating statements such as: 'It would be awful if I failed this test,' 'what will my parents say if I fail,' 'I'll be a real failure if I don't make at least 80% on this test,' contribute to tension and anxiety which often result in poor test results. The brain can only attend to one thought at a time, and if negative internalized sentences get in the way of clear thinking, efforts to do well at tests will often be blocked. Lynn (1974) and Maultsby (1975) also stress the point that only a still mind is receptive. If the brain is labored with irrational self-talk, it cannot be open to the rational thoughts

conducive to good test performance. Essentially, both irrational beliefs and irrational demands are behind test anxiety. However as Oliver (1975) states, since irrational, self-defeating beliefs are learned habits, they can be unlearned or replaced with self-enhancing behaviors.

Reducing test anxiety in fifth and sixth graders was studied by Warren, Deffenbacher, and Brading (1976) using an uncounselled control group and a RET counselled experimental group to see if RET techniques would show significantly greater test anxiety reduction and thus superior test results. The RET counselled group was instructed in the A B C's of emotions, the nature of feelings, demanding versus desiring, overgeneralizations and how irrational self-talk creates and sustains upset. Results of this study showed that RET counselled students displayed significantly more test anxiety reduction as measured on the Test Anxiety Scale for Children (TASC).

The irrational belief behind test anxiety is Ellis' Irrational Belief #2: one should be thoroughly competent, adequate and achieving in all possible respects if one is to consider oneself worthwhile. Holding to this belief results in the irrational demand 'I must succeed.' There is often an element of 'perfectionism' in test anxious students who demean themselves if they fail to achieve a certain level of performance. Oliver (1975) suggests that perfectionism often accounts for the coping out and dropping out of intelligent and capable students. Rational emotive education has been beneficial in showing students that they do in fact control their thoughts and thus their test anxious behaviors by clinging to irrational beliefs and

attitudes. Training in the A B C's of emotions and the proper challenging of irrational beliefs has resulted in reduced disturbance and increased test performance (Sharma, 1970; Rand, 1970).

Underachievement and Irrational Thinking

Another area of concern to rational emotive therapists is underachievement. Zingle (1965) conducted a study with 60 under-achieving high school students to evaluate the effectiveness of a rational-emotive approach in increasing achievement. Four groups were delineated such that Group A received rational-emotive counselling sessions; Group B received the regular form of school counselling and a laggard student letter; Group C received only a laggard student letter; Group D received no treatment. While results only partially supported the hypothesis that a rational-emotive orientation to counselling students would evidence greater improvement in school marks and greater reduction in the degree of irrational thinking, it did provide support that the rational-emotive counselled group showed significantly greater academic improvement than did the untreated group. Also while Group A did not surpass Group B and C in a reduction of irrational thinking, Group A did show less irrational thinking as measured by Zingle's I-I Inventory than did the untreated group.

Conklin (1965) using an abbreviated version of the I-I Inventory (Zingle, 1965), investigated the possibility of early detection of underachievers within the school setting. Seven hundred twenty-six (726) high school students participated in the study which sought to prove that underachievers would score significantly higher than

average achievers, who in turn would score higher than over achievers on the I-I Inventory. Under, average, and over achievers were identified according to the following criteria: (a) scores obtained on a group IQ test, and (b) achievement status as measured by the teacher's marks. Results obtained from this research verified the hypothesis that academic underachievers do in fact possess greater degrees of irrational beliefs than do other students. The need for programs aimed at the identification of underachievers is stressed by Conklin (1965) and Jackson, Cleveland and Merenda (1975). Conklin (1965) further presses for the initiation of rational emotive programs aimed at reducing irrational thinking in children. Results of rational re-education should result in increased students' marks.

Sharma (1970) used 84 anxious underachievers to investigate whether a rational group therapy approach would elicit (a) a reduction in irrational beliefs, (b) a reduction in test anxiety, and (c) an improvement in school marks. The total sample was divided into four groups: Group A received rational group treatment, Group B were taught rational ideas, Group C were taught study skills and Group D received no treatment. Overall findings showed that although group counselling did not result in immediate improvement in grades, there was a greater improvement in school marks over a five month period. This would seem to indicate that RET is a successful technique for the recovery of academic underachievers. As well there was a reduction in irrational thinking in the experimental group.

Rand (1970) reports that in addition to poor academic performance, factors such as negative self-concept, a high anxiety level,

discouragement, frequent depressions and poor relationships with parents have repeatedly been found in many individuals who are in serious academic trouble. As with test anxious students, underachievers also hold many irrational beliefs which must be identified and challenged if progress is to be made.

The relationship between academic achievement and family status and/or mobility, has been briefly examined by Capps (1975). Of late, there has been criticism voiced regarding the inadequacy of the school curriculum and the need to see a return to the "3 R's." Parents and educational critics are quick to place the blame for poor academic achievement on the 'new math,' new approaches to reading or too great an emphasis on the 'arts.' There may be, however, social factors, such as the climbing divorce rate and increased family mobility which play a crucial role in emotional and academic instability in today's students. Capps (1975) states that assuming that a rising divorce rate affects the emotional stability of the family, and the child in particular, it follows that this will be negatively reflected in school adjustments and achievement. Learning to effectively cope with changes in one's life and status can be instilled in children through rational emotive education, whereby our young learn that they alone control their happiness, school achievement and overall success in life.

Benefits of Rational Emotive Education in Reducing Irrational Thinking

Research based on a rational learning theory of human behavior has produced a classroom method and a manual (Knaus, 1974) for teaching

'normal' children an emotionally healthy technique of solving both intra- and inter-personal conflicts with little or no outside help (Maultsby, Costello, & Carpenter, 1975; Ellis, 1969b, 1972a, 1972b; Di Nubile & Wessler, 1974; Ellis, Wolfe, & Moseley, 1966). Paul Hauck, an author and a rational behavior therapist, has shown that children as young as five years of age can be taught to challenge their own self-defeating beliefs, if those working with him simplify their language so as to be comprehensible by the child. A child can be taught, debated with, and shown his irrationalities in the same straight forward manner that RET therapists have dealt with adults (Hauck, 1974). While a child's vocabulary is much more limited than that of an adult, his linguistic abilities are gradually increased over time as he learns a 'new' language. [A language minus 'shoulds,' 'oughts,' 'musts,' as well as catastrophizing expressions such as 'awful,' 'terrible,' and 'horrible.']

The ramifications of utilizing a rational emotive approach within the school environment are manifold. Firstly, teachers and/or counsellors who learn and practice RET, will likely experience significant positive changes in both their own personal lives and in their relationships with their students (Kassinove, 1974; Bard, 1973; Daly, 1971; Young, 1974). Also a rational approach to learning, problem solving, and relating to others would make for more enjoyment of the educational experience per se.

Kassinove (1974) conducted a study with twenty-five graduate student therapists who were learning to use RET in their counselling practicum. A questionnaire was administered to the students upon

completion of RET instruction. Two issues were investigated:

(1) "How useful has learning RET been in your personal life?"

(2) Students were asked to check off areas in which they noticed positive personal change. The mean rating suggested that these students perceived RET to be of significant value in dealing with personal problems. Nineteen students indicated they were less anxious, guilty, and angry and had improved interactions with friends and peers. Sixteen students reported better interactions with their spouses. Ten students responded that they had noticed improved interacting with parents, children or faculty members. Seven students indicated better sexual adjustment. Kassirer (1974) states that these findings are notable in the generalizing effect RET had in these various aspects of living, not specifically dealt with in the theoretical content of the course. If more educators promoted and practiced rational thinking in the educational sphere, then interpersonal relationships would improve and the learning environment as a whole would flourish.

Formal lessons in the A B C's of Emotions and Irrational versus rational thinking are seen to 'spill over' into all aspects of the educational curriculum (Ellis, 1971b). Discussion of social issues, learning about probabilities in mathematics, dealing with motives and feelings in literature—all can be regarded in light of rational concepts. Knaus (1974) suggests that integration of rational evaluation techniques into the regular curriculum provides students and teachers with a unique method not only for learning a basic skill, but in addition, learning a sane mental health philosophy without expending additional time and effort.

Teaching rational self-counselling (RSC) or rational self-analysis (RSA) in public high school and university credit classes has been successfully demonstrated (Maultsby, Knipping, & Carpenter, 1974). Students were given basic instruction in the A B C's of emotions and also listened to counselling tapes dealing with common emotional problems. Group participation in rational self-analysis was the means by which students put into practice theoretical knowledge acquired in the classroom. Improvement in emotional health as measured by Personal Orientation Inventory (POI), the Rotter I-E Scale, and the Maultsby Common Trait Inventory was noted in the experimental group as evidenced by pre and post testing on the aforementioned scales.

Knaus (1974) suggests that parents who follow RET principles are less likely to overreact to their children's undesirable behavior, and thus may more effectively guide the child in becoming a saner, more productive, and more fun-loving adult. Grieger (1972) further suggests that all caretakers of children (teachers, parents, probation officers, counsellors, etc.) serve as models in directing the acquisition of rational or irrational thinking.

Di Nubile and Wessler (1974) are also proponents of a classroom approach to affective education, as demonstrated by positive results achieved in classes at the Living School. With young children, Di Nubile utilized a four cornered RET star (Situation, Thought, Action and Affect, and Rethinking) to promote rational thinking and behavior. Children in the elementary grades can be taught a rational approach to problem solving by merely making the concepts and

situations relevant to their age and maturity level. Everyday problems arising within the home or school setting, provide the substance for group discussion. Resolution of problems can be efficiently achieved through classroom participation because of the greater number of ideas and suggestions generated in groups. There is also the possibility of a 'generalizing effect' whereby other students, encountering a similar problem at a future date, will recall how the situation was handled, and thus exert rational control over their cognitive and behavioral responses.

Allowing individuals to more actively participate in improving and maintaining their psychoemotional health is best fostered through systematic homework assignments, role play, relaxation techniques and rational emotive imagery (Maultsby, 1971a; Maultsby & Ellis, 1974; Lazarus, 1971; Ellis, 1973). All of these techniques are readily available in the child's world. Youngsters are generally less inhibited than adults, and imagination and creativity are ripe for use in effecting more rational modes of thinking and behaving. Homework assignments are similarly within the realm of normal schoolroom activities and are in themselves an orderly logical means of deciphering and challenging erroneous beliefs and attitudes, employed to cause emotional upset.

Ellis (1962) has stated that human beings are inclined to believe that they must be thoroughly competent and achieving in all they do to feel worthwhile. Intrinsic worth, therefore, is often based upon extrinsic successes, upon one's own evaluation of oneself and upon the evaluations 'significant others' render to the individual

regarding his performance or behavior.

Brainerd (1969) studied the relationship between 160 undergraduates' personal worth estimates (as evidenced by scores on one word descriptions culled from Rogers and Dymond's (1954) and Block's (1961) Q-sort Instruments) and the extent to which they perceived their parents as loving, rejecting or neglecting them (as measured via Roe and Siegelman's 1963 Parent-Child Relations Questionnaire PCRQ). Data collected by Brainerd are as follows: (1) male subjects' perceptions of how much their mothers valued them are unpredictable of how these same male subjects evaluated themselves. A stronger relation between the male subject's perceptions of their father and their perception of themselves was however noted. Justification for this finding is based upon the masculine role model a father provides for his son. (2) The female subjects' perceptions of both father and mother appeared to be predictive of these subjects' personal evaluations. Brainerd (1969) justifies this finding as follows: "while the girl's mother is the source of information relative to the female role, the father's role is more socially powerful and rewarding. Hence, a mother's behavior and her evaluations are not exclusively relevant to the female child as are the father's behavior to the male child" (p. 18).

Sex differences noted in this study support Irrational Belief #2 in that human beings tend to attribute their inherent worth on extrinsic information presented by 'significant others.' Children in one parent families, therefore, have only one significant other from whom to acquire information on their sex role and their worthwhileness

as a human being.

Irrational Thinking and Sex Differences

With respect to sex role stereotypes and the effect stereotyping has on personal adjustment, Rogers (1951) states that the accurate perception and subsequent integration of social expectations with personal values are essential to adaptive development. Essentially, sex role stereotypes provide the individual with a framework for sex appropriate behaviors; however, these stereotypes can be the source of considerable conflict with personal values. Deutsch and Gilbert (1976) conducted a study with 64 male and 64 female undergraduate students to determine the effect of sex role stereotypes on perceptions of self and others and on the overall personal adjustment. The Bem Sex-Role Inventory (BSRI, 1974) and the Revised Bell Adjustment Inventory (1962) were utilized to determine among other things, whether sex typing is associated with poor adjustment. Findings from the study indicated that women's sex role concepts of their real self, their ideal self and their belief of what the other sex desires were very dissimilar, whereas those of the males were highly similar. For males then, there appears to be better personal adjustment in that they do not experience the great extent of self-concept discrepancy as do females. Deutsch and Gilbert (1976) explain:

The average college undergraduate woman sees herself as slightly feminine, wants to be more androgynous, but believes she is more desirable to men if she is extremely feminine. She is pulled towards opposing goals, a situation ripe for conflict. College males, on the other hand, do not appear to have this conflict between their role perceptions (belief) and personal values (real self and ideal self). (p. 377)

Women thus experience much dissonance in the way they perceive,

think, and feel about their sex-role and sex stereotypes. Dissonance occurs when there are large discrepancies between how they see themselves, how they think men wish them to be and how they would like to be as individuals. Implications for rational education reside in the issue of sex stereotyping. Women, therefore, appear to be very cognizant of 'others' expectations of them, and are caught in a bind when they feel unable to be their own person or to act in ways appropriate to their own concept of 'self.' Rational education would be helpful in this area as both males and females can experience the belief that they are worthwhile just as a human being no matter what sex or sex role they assume in life. Holding this view would allow the individual to strive and achieve potential as a human being regardless of the ideal sex role they feel they should be fulfilling.

Ellis (1962) stresses the irrationality of living one's life and fulfilling roles to please 'others.' Striving only to receive the approval of others is self-defeating in two ways: (1) this behavior does not allow the individual to be his 'real self' because he will always be acting so as to receive affection or acceptance of 'others.' Behaviors that please others may not be congruent with what he truly believes of himself; in other words, he is not being true to himself. (2) if the individual does not receive positive recognition for the role he/she plays, there will be ensuing negative feelings of failure and the individual may feel worthless. Essentially then, both males and particularly females need encouragement in practicing behaviors which will reduce the dissonance between their 'real self' and their 'idealized self.' Women have been shown to

exhibit a greater tendency towards maladjustment particularly with respect to sex role stereotypes and their perceptions of self.

Davies (1970) conducting a study with adults, utilizing the Adult Irrational Ideas Inventory, found an overall sex difference in A-I-I Inventory scores, with females scoring significantly higher than males. Although Davies attributed the significant sex differences to the larger discrepancy between the sexes in the representative sample, Vargo (1972) also showed a sex difference on A-I-I Inventory scores with females scoring significantly higher than males. Both studies therefore provide support to the view that males, especially "mentally healthy" males, tend to be more rational, in Ellis' terminology of rationality, than their female counterparts (Vargo, 1972). The causes for differences between the sexes may be a result of societal expectations relative to sex roles and sex role expectancies.

Several hypotheses are implicit in the foregoing discussion of related theory and research in RET or RBT. The hypotheses to be empirically tested in this study are to follow. The prime intent of this thesis is to create a reliable and valid irrational ideas inventory for use with children. Empirical study of the C-I-I Inventory will occur through a construct validation network. It will be remembered that the C-I-I Inventory was so formulated that low scores are indicative of a tendency towards more rational thinking, while higher scores indicate an inclination towards a greater degree of irrational thinking.

Hypotheses to be Tested

Hypothesis I

There will be a positive correlation between level of irrational thinking as measured on the C-I-I Inventory and sex.

Hypothesis II

There will be a positive correlation between level of irrational thinking as measured on the C-I-I Inventory and self-concept as determined by the child's rating of how he feels about himself.

Hypothesis III

There will be a positive correlation between level of irrational thinking as measured on the C-I-I Inventory and a rating of negative social and emotional behaviors displayed by children in the classroom. Negative behaviors were rated by the classroom teacher on a checklist.

Hypothesis IV

There will be a negative correlation between level of irrational thinking as measured on the C-I-I Inventory and a rating of positive social and emotional behaviors displayed by children in the classroom. Positive behaviors were rated by the classroom teacher on a checklist.

Hypothesis V

There will be a positive correlation between level of irrational thinking as measured on the C-I-I Inventory and achievement

in academic tasks as indicated by the teacher's marks and IQ scores.

Hypothesis VI

There will be a negative correlation between a level of irrational thinking as measured on the C-I-I Inventory and verbal IQ as indicated by grade three Lorge Thorndike Intelligence Test scores.

Hypothesis VII

There will be a negative correlation between level of irrational thinking as measured on the C-I-I Inventory and socio-economic status of the family as determined by categorizations on the Pineo-Porter Classification of Occupational Prestige in Canada.

Hypothesis VIII

There will be a positive correlation between a level of irrational thinking as measured on the C-I-I Inventory and number of siblings within the family system.

Hypothesis IX

There will be a negative correlation between level of irrational thinking as measured on the C-I-I Inventory and children living in one parent families.

CHAPTER III

CONSTRUCTION OF AN IRRATIONAL IDEAS INVENTORY FOR USE WITH CHILDREN

Item Preparation

The original 122-item I-I Inventory (Zingle, 1965) and the revised 60-item A-I-I Inventory (Davies, 1970) were utilized in conjunction with the Children's Survey of Rational Concepts (Knaus, 1974) in formulating an Irrational Ideas Inventory suitable for use with children. Forty-six items were initially selected, to be representative of the eleven irrational beliefs set forth by Ellis (1962). Since two of the aforementioned inventories were designed essentially for use with high school students and adults, statements extracted from these sources were simplified and reworded where necessary, so as to be clear and comprehensible to a child of eight or nine years of age. Revisions were also required to make statements more relevant to children without disrupting the basic intent of the items. For example, Item 39 on the I-I Inventory reads "I worry over possible misfortunes." This statement was reworded to read "I worry that things might go wrong."

Approximately one third of the items were stated such that agreement would indicate rational thinking, while the remaining items were worded such that agreement would be an indication of irrational thinking. The possibility of a 'yes' response set was eliminated by apportioning items in the above manner. To ensure readability of

all items, several grade four teachers were consulted to determine the suitability of each statement for this particular age and grade level. In addition, one grade four class piloted the inventory, serving as an empirical test of readability. The pilot study was similarly a means whereby items could be revised or rejected if deemed necessary.

The writer read each item of the inventory aloud to every class. Students followed along on their individual copies, circling either the 'yes' or 'no' response most appropriate to the way they felt or thought about each statement. Oral presentation was undertaken so that students of more limited reading abilities would not be hampered in their efforts to complete the survey.

Choices of Responses to the C-I-I Inventory

The number of responses available on the C-I-I Inventory are two, unlike many irrational ideas inventories which typically use a five-point Likert-type scale. Scales measuring attitudes or beliefs are most often structured for the Likert system because attitudes or beliefs are generally seen to vary in quality from very positive to very negative (Thurstone, 1929, 1931; Likert, 1932; Guttman, 1944; Osgood et al., 1957; Anderson & Fishbein, 1965). Furthermore, this suggests that there is a point on the attitude or belief continuum at which there is a point of neutrality, or a 'zero' point.

It is evident then, that the structure of belief scales has traditionally considered a choice of responses ranging from 'strongly positive,' 'positive,' 'neutral,' 'negative' and 'strongly negative.' The author sought to make administration procedures as clear as

possible, eliminating any confusion which might arise for those children unfamiliar with the experience of completing a subjective questionnaire such as the C-I-I Inventory. It was felt that requiring them to choose one answer from five possible responses might impede the process of completing the questionnaire. While the number of possible responses was restricted in comparison with other similar scales, the measurement of irrational attitudes or beliefs was not felt to have been hindered. Children were essentially given the choice of the extreme ends of the Likert continuum; that is, 'yes' or 'strongly agree' and 'no' or 'strongly disagree.' The point of neutrality was therefore eliminated. Several researchers provide support of a two choice response format in measuring attitudes. Shaw (1967), writing on the measurement of attitudes, states that having only a choice of two responses, that is, 'yes' or 'no,' is not necessarily debilitating to the measurement of belief or attitude systems. Shaw cites the work of Krech and Crutchfield (1948) who have suggested that attitudes always have either a positive or negative sign; if they have no sign (i.e., are neutral or at the zero point) they cannot be called attitudes at all. The use of a two choice response format in the C-I-I Inventory should therefore not detract from the overall measurement of irrational attitudes or beliefs operating in children.

Content Validity

Examining content validity requires judging whether each item—and the distribution of items as a whole covers what the tester wants to measure (Cronbach, 1970). Several procedures were utilized

to determine content validity as the test and the methods used in preparing the inventory were carefully scrutinized.

First, the majority of items were taken directly from the pool of items found in Zingle's I-I Inventory and Davies A-I-I Inventory. Although many items underwent appropriate revision, the basic intent of all statements remained intact. Content validation for the above mentioned inventories had formerly been established by Zingle (1965), Conklin (1965), Hoxter (1967), Sanche (1968), Fox (1969), Allen (1970), and Davies (1970). Second, all items selected for inclusion in the inventory were carefully chosen and examined by the author so as to provide sufficient sampling of Ellis' eleven irrational beliefs. In line with this, a letter written by Albert Ellis (1969), wherein he selected the most relevant items from Zingle's I-I Inventory was used as the prime basis for selection of items for the C-I-I Inventory. As a result, only the most pertinent items in the opinion of both Albert Ellis and Harvey Zingle were included. Finally, the author subjectively appraised the forty-six item inventory upon completion of the pilot study to consider omitting any ambiguous items. Two items were discarded either because they were confusing or because all the children in the pilot study responded to the item in the same manner. Cronbach (1970) suggests that dropping a particular item probably will not spoil the content validity of the test. The danger is that many of the poorly constructed items will fall in the same content area. When they are dropped the test loses its representativeness. Only two items were dropped and these were replaced by items measuring the same belief, so that the representativeness of the test

should not have been altered. Two items containing double negatives were rewritten as suggested by Cronbach (1970), so as to eliminate difficulties encountered by students in comprehending the meaning of these somewhat awkwardly worded statements. Five additional items were incorporated into the inventory, making a final form of 49 items.

Construct Validity

Cronbach (1970) suggests three appropriate methods in establishing construct validity:

1. Examine what constructs might account for test performance by means of observation or logical study of the test.
2. Derive testable hypotheses from the theory surrounding the construct. This is a purely logical operation. (Discussion of this procedure will be considered in Chapter IV.)
3. Carry out an empirical study to test one hypothesis after another. (Empirical procedures conducted will be dealt with as well in Chapter IV.)

The Final 49-Item Children's Irrational Ideas Inventory

The original 46-item draft underwent a subjective analysis to determine any statements which were confusing or ambiguous to the subjects. Two items were deleted as previously mentioned because of confusion and because all students responded to the item in the same way. Five additional items were inserted into the 46-item form making a final version containing 49 items. One major alteration was

necessitated by findings of the pilot study. Administration of the initial form revealed difficulties that students had in understanding items which had been so worded to eliminate the possibility of a 'yes' response set. For example, "Yes, I am not troubled by thoughts of death," or "No, I am not troubled by thoughts of death." This format required considerable explanation on the part of the writer to clarify the intent of statements worded in this way. The situation prompted a reversal of said items to a positive context.

On the initial version of the C-I-I Inventory, each of the eleven irrational beliefs was represented by three to five items. On the final form of the C-I-I Inventory the number of items varied as well, giving a somewhat uneven distribution for each belief. Ellis (1962) suggests that his listing of the eleven Irrational Ideas "may be classified in various ways so that the . . . listing is not meant to be definitive or non-overlapping" (p. 61). To examine this claim, Allen (1970) conducted an investigation into the separability and homogeneity of Ellis' irrational beliefs by a cluster analysis of items in the 122-item I-I Inventory. Findings from this study indicated that some of Ellis' eleven irrational beliefs overlap and thus mean one and the same thing. Allen also found that the I-I Inventory measures 2 major psychological traits: (a) Insecurity and alienation and (b) moral rigidity and lack of tolerance. While some of the irrational beliefs may have a greater number of statements representing them in the C-I-I Inventory, they may be measuring in part some aspect of another irrational idea. An uneven distribution of statements representing some of the irrational beliefs appears to

be acceptable because the beliefs have been shown to overlap. Table I presents the final distribution of items for each of the 11 irrational beliefs.

Item Analysis Procedure

The final 49-item version of the C-I-I Inventory was prepared and administered to 367 subjects in ten public elementary schools in the city of Edmonton. An item-total correlation analysis for the final version of the C-I-I Inventory appears in Table II. Items whose item-total correlations fell either below .200 or above .800 are starred. Fourteen items fell below the .200 level and no items were above the .800 level. These fourteen items were considered with respect to the proportion of subjects answering the item rationally as opposed to irrationally (Table III) and were, as a result, removed from the 49-item version. An item total correlation was performed on the remaining 35 items. The result of this second item total correlation is presented in Table IV. It will be noted that there were no items below the .200 level on the item analysis of the 35-item version of the C-I-I Inventory. Further research into the development of a more abbreviated version of the C-I-I Inventory as well as whether certain of Ellis' beliefs may be more prevalent than others, particularly in the young, will be discussed in Chapter VI.

Scoring Procedures

Ordinarily, responses for an I-I Inventory are recorded on a five-point Likert-type scale with a machine scored answer sheet. Scoring procedures employed in this study, however, were modified

TABLE I

The Number of Items for Each Irrational Idea
on the Final 49-Item C-1-1 Inventory

Irrational Idea Number	Number of Corresponding Items	Item Number on the 49-Item C-1-1
1	6	1, 21, 28, 38, 47, 49
2	10	5, 11, 18, 27, 29, 33, 39, 43, 45, 46
3	6	3, 30, 31, 37, 42, 48
4	2	2, 6
5	2	4, 26
6	5	8, 13, 19, 32, 41
7	4	7, 20, 17, 36
8	4	9, 22, 35, 44
9	5	10, 12, 14, 23, 40
10	2	15, 24
11	3	16, 25, 34

TABLE II

Item Total Correlations for the 49-Item C-1-1 Inventory

Item No.	Item Total r	Item No.	Item Total r
1	.346	26	.082*
2	.394	27	.681
3	.050*	28	.627
4	.498	29	.327
5	.501	30	.052*
6	.024*	31	.018*
7	.129*	32	.031*
8	.527	33	.539
9	.344	34	.348
10	.193*	35	.149*
11	.626	36	.377
12	.051*	37	.431
13	.462	38	.439
14	.053*	39	.658
15	.256	40	.158*
16	.310	41	.435
17	.310	42	.290
18	.177*	43	.315
19	.432	44	.370
20	.253	45	.223
21	.578	46	.475
22	.085*	47	.382
23	.444	48	.474
24	.220	49	.551
25	.222		

TABLE III

Students Responding Irrationally as Opposed to Rationally
on the 49-Item C-1-1 Inventory

Item No.		Item No.	
1	.534	26	.643
2	.747	27	.760
3	.403	28	.654
4	.390	29	.131
5	.755	30	.264
6	.561	31	.384
7	.401	32	.292
8	.561	33	.466
9	.322	34	.725
10	.049	35	.450
11	.619	36	.098
12	.035	37	.218
13	.518	38	.390
14	.071	39	.431
15	.572	40	.351
16	.177	41	.444
17	.444	42	.594
18	.665	43	.202
19	.768	44	.414
20	.185	45	.101
21	.580	46	.054
22	.431	47	.262
23	.087	48	.540
24	.602	49	.474
25	.534		

TABLE IV

Item Total Correlations for the 35-Item C-1-1 Inventory

Item No.	Item Total r	Item No.	Item Total r
1	.368	19	.592
2	.370	20	.289
3	.475	21	.515
4	.435	22	.335
5	.522	23	.260
6	.349	24	.376
7	.602	25	.417
8	.452	26	.595
9	.288	27	.445
10	.260	28	.315
11	.318	29	.275
12	.397	30	.358
13	.216	31	.163
14	.553	32	.262
15	.278	33	.354
16	.290	34	.473
17	.263	35	.541
18	.588		

as students read and replied to all items directly on one sheet. This method of presentation simplified instructions and was seen to be less confusing to the students. Variation in the choice of responses was also altered as students circled either 'yes' or 'no' for each statement. Weights of 0 or 1 were assigned depending upon whether the statement represented a rational or irrational belief. A mark of zero indicated rationality. A total test score was obtained by summing the weights of all 49 items. High scores were seen to be suggestive of a high degree of irrational thinking, while low scores suggest that the individual has few irrational beliefs. Appendix A contains the final form of the 49-item inventory for use with children. Appendix B contains a scoring guide for the C-1-1.

Unscorable Items

Upon scoring the inventories, it was found that some students had either missed answering an item, or had circled both the 'yes' and 'no' response, even though they had been instructed to select only one response for each statement.

The author made a decision to include inventories having one missing or inaccurately answered item. Inventories with two or more invalid items were discarded from the study.

Reliability

The final version of the C-1-1 Inventory was tested for reliability through two procedures, namely test-retest and the Kuder-Richardson 20 formula. Subjects chosen to participate in the retest consisted of 68 students drawn from two of the ten schools in the entire sample.

Results obtained from a six week post-test of the C-1-1 Inventory yielded a Pearson Product moment correlation coefficient of reliability of .80.

Anastasi (1968) suggests, that in test-retest reliability, it is important to keep the time interval small between the first and second administrations of the test. With young subjects in particular, the time span should be even shorter than for adults due to progressive developmental changes which occur over a period of a month or even less. On the other hand, the researcher did not want the elapsing time between test and retest to be of such a short duration that subjects might recall some of their previous responses. Anastasi (1968) similarly cautions against too short a time span of test-retest in case the same pattern of right or wrong responses occurs through sheer memory. It was for the above reason then, that a period of six weeks was deemed appropriate in consideration of the aforementioned factors. The Kuder-Richardson 20 formula was calculated, producing a reliability estimate of .80.

CHAPTER IV

PROCEDURE

Sample

The subjects chosen to participate in this study were grade four students enrolled in ten elementary schools within the Edmonton Public School system. Sixteen classes in total were drawn from the representative schools, with some schools volunteering two or three classes, and other schools having only one class at the grade four level. A diverse cross section of socio-economic groups was desirable to the study, and for this reason specific schools were chosen so as to give representation to a broad sampling of occupational groups. Schools in the north, east, west, south and city centre were designated for possible inclusion in the study. Permission from the local school board and the principals of schools involved was a necessary requisite to carrying out the research. The total number of subjects was 403; however, of these thirty-six inventories were invalid, and therefore were not included in the analysis of data. The final number of subjects was 367; 200 females and 167 males. Table V provides a breakdown of the sample by school, number of classes per school, and the proportion of males and females participating in the study.

Selection of Grade Four Students

Grade four students were selected to complete the C-1-1 Inventory, because at this age and grade level children are generally

TABLE V
Breakdown of Sample by School, Number of Classes and Sex

School	Number of Classes	Females	Males	Total
H. A. Gray	1	12	15	27
Oliver	1	8	7	15
Norwood	1	11	11	22
Laurier Heights	2	16 12	9 8	25 20
Grandview	1	11	10	21
Duggan	2	11 15	9 9	20 24
Beacon Heights	1	12	16	28
J. A. Fife	2	11 10	15 8	26 18
Caernarvon	2	13 17	9 7	22 24
Grace Martin	3	17 11 13	10 12 12	27 23 25
TOTAL	16	200	167	367

able to read and comprehend statements of the type presented in the questionnaire to be administered. Many younger children have not yet acquired the reading or comprehension skills necessary to follow and understand the intent of the items listed in the inventory. At the grade four level, children are also better able to attend to verbal instructions and follow through with tasks presented with little or no extra assistance. With these criteria in mind, grade four students were chosen to test the C-I-I Inventory.

School Involvement and Teacher Participation in the Study

Only schools, who agreed to the purpose of the study and indicated cooperation in carrying out the necessary administration procedures, were included. The questionnaire was submitted to the various schools for perusal, so that objections to the study per se, could be voiced prior to the dates set for administration of the inventory. Originally eleven elementary schools had been designated for the testing of the C-I-I Inventory; however, one elementary school declined participation because the principal and his teachers "felt some of the items in the questionnaire might upset the children."

Personal Data Checklist and Teacher Rating of Student Social and Emotional Behavior

A checklist format was utilized to gather relevant information on each child's academic performance and overall social and emotional behavior within the classroom environment. Limited time available for teachers to complete this task, prompted setting out a quick means of

acquiring the essential information. Teachers merely placed a check-mark after those descriptions applicable to each student. (Appendix C presents a copy of the Teacher Checklist of Student Social and Emotional Behavior.) Time was spent discussing this procedure and teachers were requested to check social and emotional behaviors most frequently displayed by the child in the classroom setting. While children demonstrate both positive and negative behaviors within the classroom, teachers were asked to check behaviors most frequently in evidence. The information gathered from the Personal Data Checklist and the Teacher Rating of the child was coded and employed in testing the hypotheses forming the construct validation network of this study.

Measurement of Socio-Economic Status

Peter Pineo and John Porter (1967) established a scale of occupational prestige surveying a wide portion of the Canadian labor force. While several other researchers (Tuckman, 1947; Inkeles & Rossi, 1956; Duncan, 1961; Blishen, 1964) have developed scales ranking numerous occupations, the Pineo-Porter scale was selected for this study because of the broad cross section of occupational categories represented. Similarly, the "socio-economic" status classification also shows a clear gradient from professional to unskilled occupations in the means for each category (Pineo & Porter, 1967).

The Lorge Thorndike Intelligence Test

The Lorge Thorndike Intelligence Tests consist of a series of group tests of abstract intelligence for use with subjects from

kindergarten through grade twelve. Scores obtained are in the form of a verbal IQ and a nonverbal IQ derived by converting raw scores to deviation IQ equivalents. For the purpose of the present study, only the verbal IQ scores from Level A were considered, as they are seen to reflect the child's reasoning abilities and overall verbal facility. The author sought to examine whether children of higher verbal ability evidence greater or lesser degrees of irrational thinking because of their verbal capabilities.

The reliability and validity of the Lorge Thorndike Intelligence Test is superior, and for this reason is widely used in the educational milieu. Reliability estimates have been established through use of alternate form estimates (verbal .896, nonverbal .846) and odd even estimates (verbal .940, nonverbal .905) (Lorge Thorndike, 1957).

Description of Scores on the Children's Irrational Ideas Inventory

The possible span of scores on the C-I-I Inventory ranges from 0 to 49. The range of scores obtained for the purpose of this particular study resulted in a distribution of scores from 6 to 37. The mean for the entire sample was 20.35 with a standard deviation of 6.75.

Administration of the Children's Irrational Ideas Inventory

The C-I-I Inventory was administered to students during the month of March, 1977. All students in each of the classes received a copy of the inventory from which they read and recorded a 'yes' or

'no' response to each item of the questionnaire. Instructions were presented orally followed by a brief period of questions to clarify any misunderstandings regarding the procedure. The author personally administered the inventory to each class, reading out loud each item as the children followed along on their own copies, responding in the manner most appropriate to what they believed or felt about the statements. Upon completion of the inventory, the students were asked to place a circle around one of the following descriptions of how they felt about themselves generally: 'very good,' 'alright,' 'not very good.' This somewhat crude measure of self-concept was utilized to determine whether there was any correlation between a high level of irrational thinking and a poor self-concept. While the measure was very simple, it was a quick and clear cut procedure which children of this age and grade level could readily understand and follow. Total testing time was approximately twenty-five minutes for each class of students.

CHAPTER V

ANALYSIS OF DATA AND FINDINGS

Data gathered from the subjects' responses to the Children's Irrational Ideas Inventory, and information accumulated from both the Personal Data Checklist and the Teacher Rating of the Student's Social and Emotional Behavior as displayed within the classroom environment, provided the necessary material for the statistical analyses of the hypotheses to be tested. All data acquired from the above sources were transferred to data sheets in preparation for computer key punching by the Division of Educational Research (DERS) at the University of Alberta. The aforementioned material was subjected to two statistical analyses, namely intercorrelations and analysis of variance. A Scheffé multiple comparison of means and the Neuman-Keules comparison between ordered means were also calculated to determine overall differences and simple differences respectively, between groups of children residing in one parent families; children living with both parents; and scores obtained on the C-I-I Inventory. The .05 level of significance was selected as being indicative of significant difference for all of the statistical analyses in this investigation.

Primary Intent of the Study

The primary purpose of this study was to empirically test the Children's Irrational Ideas Inventory (C-I-I), an abbreviated and simplified version of the Irrational Ideas Inventory (I-I

Inventory, Zingle, 1965) and the Adult Irrational Ideas Inventory (A-I-I, Davies, 1970) as to its validity and reliability in measuring irrational thinking in elementary school aged children.

Firstly, the reliability of the C-I-I Inventory was examined through two procedures. Test-retest was utilized to determine whether the initial administration of the C-I-I Inventory would produce similar overall results when compared with scores obtained upon the second administration of the inventory to a portion of students from the original sample some six weeks hence. Sixty-eight subjects were selected to participate in retesting. Results of this method provided a Pearson-Product moment correlation coefficient of .80 over a six week interval. Secondly, the Kuder-Richardson 20 formula (KR-20) was employed to indicate internal consistency of subjects' responses to all items in the test (Anastasi, 1968). The reliability estimate resulting from this procedure also yielded an internal consistency estimate of .80.

With reference to the validity of the C-I-I Inventory, it has been previously stated (see Chapter III), that content validity has been established by a number of researchers (Zingle, 1965; Conklin, 1965; Hoxter, 1967; Taft, 1968; Sanche, 1968; Fox, 1969).

Both estimates of reliability resulting from the Pearson-Product moment correlation of .80 and the Kuder-Richardson 20 formula of .80 indicate support of the reliability of the Children's Irrational Ideas Inventory. This would therefore indicate that the C-I-I Inventory is a valid and reliable instrument for measuring irrational thinking in elementary school aged children.

Construct Validity of the C-I-I Inventory

The hypotheses generated to examine construct validity seek to establish correlations between a level of irrational thinking as measured on the C-I-I Inventory, and specific variables such as sex, self-concept, academic achievement, verbal IQ scores, socio-economic status of the child's family, number of siblings within the family grouping, and family status (that is, whether the child lives with both parents or with only father or mother). Correlations between the above variables and scores obtained from children's scores on the C-I-I Inventory were analyzed. Results of the statistical operations follow.

Null Hypothesis 1

There is no correlation between sex and irrational thinking as measured on the Children's Irrational Ideas Inventory.

Research Hypothesis 1

It is hypothesized that there is a significant correlation between sex and level of irrational thinking as measured on the C-I-I Inventory, with females scoring higher on a scale of irrationality. The coding of subjects in this analysis resulted in designating males as 1, and females as 2. The correlation was .137 which is significant at the .009 level. Thus there is a positive correlation between level of irrational thinking and sex. The null hypothesis was therefore rejected. The research hypothesis was confirmed in that males scored lower on the C-I-I Inventory than did their female counterparts.

Null Hypothesis 2

There is no correlation between self-concept and irrational thinking as measured on the C-I-I Inventory.

Research Hypothesis 2

It is hypothesized that there is a significant correlation between self-concept and level of irrational thinking as measured on the C-I-I Inventory, with children having lower self-concepts scoring higher on a scale of irrationality.

The child was asked to rate himself as to whether he feels 'very good,' 'alright,' or 'not very good' about himself as a person. The aforementioned responses were coded 1, 2, and 3 respectively. The correlation was .349 which is significant at the .001 level. Thus there is a positive correlation between a high level of irrational thinking and a poor self-concept as indicated by the child's perception and rating of himself. The null hypothesis was therefore rejected. The research hypothesis was confirmed in that children with poor self-concepts scored higher on the C-I-I Inventory than did children with more positive self-concepts.

Null Hypothesis 3

There is no correlation between the classroom teachers' rating of many negative social and emotional behaviors of each child and irrational thinking as measured on the C-I-I Inventory.

Research Hypothesis 3

It is hypothesized that there is a significant correlation between a level of irrational thinking as measured on the C-I-I

Inventory, and negative social and emotional behaviors displayed and noted by classroom teachers on the Teacher's Rating of Student Behavior. The correlation obtained was .277, which is significant at the .001 level. Thus there is a positive correlation between a high level of irrational thinking as measured by the C-I-I Inventory and a high number of negative or self-defeating type behaviors as indicated by the Teacher's Rating of Student Behavior. The null hypothesis was therefore rejected. The research hypothesis was confirmed in that children with lower scores on the C-I-I were seen to display fewer self-defeating behaviors than did children scoring higher on the Children's Irrational Ideas Inventory.

Null Hypothesis 4

There is no correlation between the classroom teacher's rating of many positive social and emotional behaviors of each child and irrational thinking as measured on the C-I-I Inventory.

Research Hypothesis 4

It is hypothesized that there is a significant negative correlation between level of irrational thinking as measured on the C-I-I Inventory and positive social and emotional behaviors exhibited within the classroom setting. Teacher rating of social and emotional behavior was the prime criterion for measuring this variable. The correlation obtained was $-.348$ which is significant at the .001 level. As the child's irrationality score increases, the number of positive type behaviors noted by teachers within the classroom situation decreases. The null hypothesis was therefore rejected.

The research hypothesis was confirmed, in that children with higher scores on the C-I-I Inventory tend to display fewer positive kinds of social and emotional behaviors than do children scoring lower on the Children's Irrational Ideas Inventory.

Null Hypothesis 5

There is no correlation between irrational thinking and school achievement.

Research Hypothesis 5

It is hypothesized that there is a significant correlation between level of irrational thinking as measured on the C-I-I Inventory and school achievement. Teachers were asked to rate each student's academic performance according to the following: 'excellent,' 'above average,' 'average,' 'below average,' 'poor.' Coding of the above was as follows: 1, 2, 3, 4, and 5 respectively. The correlation obtained was .342 which is significant at the .001 level. As the child's score on the C-I-I Inventory increases, academic underachievement also increases. The null hypothesis was therefore rejected. The research hypothesis was confirmed, in that children scoring higher on the C-I-I Inventory evidence more academic underachievement in school related tasks than do children scoring lower on the Children's Irrational Ideas Inventory.

Null Hypothesis 6

There is no correlation between verbal IQ scores and irrational thinking as measured on the C-I-I Inventory.

Research Hypothesis 6

It is hypothesized that there is a significant negative correlation between IQ scores and irrational thinking as measured on the C-I-I Inventory. Children scoring higher on the C-I-I Inventory will therefore have lower verbal IQ scores than will children scoring lower on the Children's Irrational Ideas Inventory. Actual IQ scores obtained from administration of the Lorge Thorndike Intelligence Test (Level A) administered in grade three, were utilized in carrying out correlations between scores on the C-I-I Inventory and verbal IQ scores. The negative correlation obtained was $-.343$ which is significant at the $.001$ level. Therefore, as scores on the C-I-I Inventory increase, verbal IQ scores were seen to decrease, confirming the research hypothesis that children scoring higher on the C-I-I Inventory have lower verbal IQ scores on the Lorge Thorndike Intelligence Test. The null hypothesis was therefore rejected.

Null Hypothesis 7

There is no correlation between irrational thinking and family socio-economic status.

Research Hypothesis 7

It is hypothesized that there is a significant negative correlation between a level of irrational thinking as measured on the C-I-I Inventory and socio-economic status. Socio-economic status was indicated by assigned values for various occupations according to the Pineo-Porter Scale of Socio-Economic Prestige in Canada (1967). The higher the prestige rating of an occupation in

Canada, the higher the numerical value designated. A negative correlation of $-.269$ was obtained, which is significant at the $.001$ level. Therefore, as the child's score on the C-1-I increases the designated numerical value placed on the family's socio-economic status decreases. Thus the research hypothesis was confirmed. The null hypothesis was therefore rejected.

Null Hypothesis 8

There is no correlation between the number of siblings within a family system and irrational thinking as measured on the C-1-I Inventory.

Research Hypothesis 8

It is hypothesized that there is a significant correlation between size of family groupings and irrational thinking as measured on the C-1-I Inventory. Children scoring higher on the C-1-I Inventory come from families having more siblings within the family system. The positive correlation obtained was $.152$ which is significant at the $.003$ level. Thus the research hypothesis is confirmed as there is a significant positive correlation between high scores achieved on the C-1-I Inventory and more siblings within a family grouping. The null hypothesis was therefore rejected.

Null Hypothesis 9

There is no correlation between irrational thinking and children residing in one parent families.

Research Hypothesis 9

It is hypothesized that there is a significant correlation between a level of irrational thinking as measured on the C-I-I Inventory and children living in one parent families. Coding of these categories was as follows: children living with both parents (1), children living with mother only or father only (2). The negative correlation obtained was $-.180$ which is significant at the $.05$ level. The research hypothesis is therefore confirmed, in that there is a correlation between level of irrational thinking and children in one parent families.

An analysis of variance was carried out to determine significant differences among groups of children living with both parents; children living with their mother; children living with their father only; and scores obtained on the Children's Irrational Ideas Inventory. A fourth category 'other' was set out for children living under circumstances not accounted for by the above mentioned categories. Foster children or wards of the government might be examples of children falling within this group. The above categories were coded 1, 2, 3, and 4 respectively. From the total sample of 367, only one child fell within category four and for the purposes of the analysis of variance the 'other' category was eliminated from this procedure. Table VI indicates the mean, variance, and standard deviation for children living with mother and father (1); children living with mother only (2); and children living with father only (3).

Results of the analysis of variance (see Table VII) indicate significant differences among groups of children living with mother

TABLE VI

Analysis of Variance for Children Living with Both
Parents (1); Children Living with Mother
Only (2); Children Living with Father
Only (3); and C-1-1 Inventory Scores

Group	Number	Mean	Variance	Standard Deviation
1	295	19.8983	44.3301	6.6581
2	63	21.7778	47.0792	6.8614
3	8	24.3750	49.6964	7.0496
	366	20.3197	45.4033	6.7382

TABLE VII

Homogeneity of Variance
Test Chisq = 0.1284 Probability 0.9378

Source	SS	MS	DF	F	P
Groups	.31781250E+03	158.91	2	3.54	.030054
Error	.16299813E+05	44.90	363		

and father; groups of children living with mother only; and children living with father only, and scores obtained on the Children's Irrational Ideas Inventory. The Scheffé Multiple Comparison of Means (see Table VIII) however indicated no significant difference between groups one and two and groups two and three.

TABLE VIII
Probability Matrix for Scheffé Multiple Comparison of Means

	1	2	3
Group 1	1.000	0.1313	0.1773
Group 2	0.1313	1.000	0.5873
Group 3	0.1773	0.5873	1.000

The Newman-Keuls comparison between ordered means was calculated and indicated significant differences between group one and group three. Significant differences therefore were calculated for the groups of children living with both parents and children living with father only and scores obtained on the C-I-I Inventory. Children living with both parents therefore scored lower on the C-I-I Inventory than did children living with only their father. Table IX reports the results of this analysis.

A t-test was also performed to determine differences between groups of children living in two parent families and children living in one parent families (regardless of whether it was with mother only or father only), and scores obtained on the C-I-I Inventory. Results of this analysis are presented in Table X. Findings of this statistical

TABLE IX
Newman-Keuls Comparison between Ordered Means

	3	2	1
Means	24.375	21.778	19.898
1 19.898	4.477*	1.879	0.0
2 21.778	2.597	0.0	
3 24.375	0.0		
	R = 3	2	

*3.04 exceeds 2.77 which is significant at the .05 level. Significant differences were calculated between group (1), children living with both parents; and group (2), children living with father only. Consult Table B4, p. 648 in Winer. The multiplier is 1.46945.

TABLE X
Differences between Means of Independent Samples

	Means	S.D.	DF	T	Prob
Group 1 (children living with both parents)	20.000	6.9292	364	-2.2634	.024
Group 2 (children living with one parent)	22.0704	6.8813			

F-Tests: Homogeneity of Variance

		DF	F ratio	Prob
Variable 1	48.014	294	1.01397	.97211
Variable 2	47.352	70		

procedure corroborate analysis which suggests that children living with both parents exhibit lesser degrees of irrational thinking as measured on the C-1-I Inventory.

Summary of Statistical Analysis

The statistical analyses of the foregoing hypotheses were confirmed in each case. Results of the intercorrelational analyses and the analysis of variance provided support for the directionality of all the hypotheses postulated.

CHAPTER VI

SUMMARY, DISCUSSION, AND IMPLICATIONS

Summary and Discussion

The purpose of the present study it will be recalled, was to create a Children's Irrational Ideas (C-I-I) Inventory, and to empirically test the reliability and validity of the instrument. Support of the reliability of the C-I-I Inventory was obtained through the statistical procedures of a Pearson Product moment correlation coefficient and a Kuder Richardson 20 Formula estimate of .80 and .80 respectively.

The validity of the C-I-I Inventory occurred within a construct validation network, as hypotheses were generated to explore correlations between C-I-I Inventory scores and such variables as sex, academic achievement, verbal IQ, socio-economic prestige of the child's family, number of siblings within the family grouping, and whether the child resides with both parents or in a one parent family.

The hypotheses set forth in this study were presented in light of previous cognitive, emotive, and behavioral research, which supports the view that one's internal self-talk about a fact or event, results in positive, negative or neutral emotional consequences, depending upon the inherent nature of the self-communication. Ellis' (1962) theory of irrational beliefs and Maultsby's (1967) practically oriented Rational Behavior Therapy provide the general framework of

the study.

All of the hypotheses generated were supported by the statistical analyses of data. While previous research served to suggest the directionality in two of the areas of this study (sex and academic achievement), several of the hypotheses under investigation were not postulated on the basis of prior studies.

The findings of this investigation indicate a sex difference, with females scoring significantly higher on the C-I-I Inventory than did males. These results are consistent with previous findings of Davies (1970) and Vargo (1972). Societal expectations of how females 'should' or 'ought' to act or react in various situations, has possibly contributed to some extent to a greater inclination toward irrationality. Jongeward and Scott (1976) write that females face many inner and outer conflicts which are generated as a result of rapidly changing circumstances which go against tradition-bound attitudes. Females have had to adapt to changes in role expectations, many of which are a far cry from what they learned as children. Tradition-bound attitudes have contributed in part to women's confusion as to their appropriate role behavior. Lucille Forcer (1976) expresses similar sentiments noting that "although great changes have occurred in adolescent and adult definitions of sex roles, much habitual automatic behavior of the sexes remains at variance with what is consciously accepted in redefining roles" (p. 134). Jongeward and Scott (1976) reiterate that "the result of this mix of slowly changing attitudes and rapidly changing circumstances is that modern women's roles and life styles are being pulled and pushed in all directions:

"Get married"
 "Get a job"
 "Don't have children"
 "Have a family"
 "Keep your freedom"

"Stay home where you belong"
 "Be more of a real person"
 "Be yourself"
 "Be sexy"
 "Don't do it" (p. 3)

Females could benefit from rational-emotive education particularly in acquiring attitudes and behaviors which are more in line with their own perception of what it means to be firstly "human" and secondly "female." Essentially, females need to experience the reality of themselves as they are, not as they imagine they should be.

Children scoring higher on the C-I-I Inventory exhibited 'poor' self concepts as shown through their self-rating system of how they 'think' or 'feel' about themselves as persons. A poor self-concept implies unacceptance of self. Several of Ellis' irrational beliefs are central to unacceptance of self for having made a mistake and thus being 'imperfect.' Maintaining a negative self-concept is the result of the rehearsing over and over, through one's self-talk, several irrational thoughts. Simon (1977) suggests that individuals who feel negatively about themselves, continually put themselves down through their self-talk which is not founded upon plain honest facts. No matter how often 'others' tell us of the positive attributes we possess and exhibit in our daily lives, it is the way we see ourselves that is important. Simon (1977) writes that "It's our self image that causes us to act and think the way we do in all sorts of situations" (p. 53). Behind one's self-image, however, lie many rational or irrational beliefs which contribute to an overall sense of feeling good or feeling bad about oneself. If an individual believes that he is 'incompetent,' 'incapable,' 'unattractive,'

'unpopular,' and that it is 'awful,' he is practicing over and over irrational notions which place stipulations on the value of his very 'being.'

No matter how hard any human may try, he can never be perfectly achieving in all endeavors, nor can he be loved or accepted by everyone in his environment. A realization of the inherent 'uniqueness' and 'worthwhileness' in being 'human' heralds the beginning of acceptance of self. Along with accepting oneself comes a sense of knowing the things one can change and the things one cannot change. We can only change ourselves. If there are certain attitudes and/or attributes that it would be 'in our own best interest' to change, we can make a decision to work towards these ends. Placing the direction of change and the responsibility for change with the individual increases a sense of respect in self.

Another finding of this study was that children obtaining lower scores on the C-I-I Inventory tended to display fewer negative social and emotional behaviors within the classroom situation. More positive behaviors were noted by teachers, which indicates that children who hold and practice fewer irrational beliefs are able to function more positively within the learning environment. As Zingle (1972) pointed out, in order to obtain maximal benefit from the learning experience it is desirable to cultivate a positive, rational outlook towards self and learning in general. Children can be provided with the important insight that they do in fact have choices as far as going to school, doing assignments and the like, but that with any choice are consequences. This understanding encourages the

individual to make decisions for himself and to accept responsibility for his choices. Showing children that there is a difference between thinking they "have to do something" and doing something because it is "in their own best interest," encourages a sense of being in control of the direction of one's life. Rational emotive education aims to instill logical attitudes and beliefs which provide the foundation for deriving positive gains from learning and living.

Children who were underachieving in academic tasks (as noted by the teacher's rating based upon IQ scores and school marks) scored significantly higher than those students who were working in accordance with their intellectual capabilities. This finding corroborates numerous research studies (as discussed in Chapter II) which suggest that individuals who perform below their intellectual capacity readily indoctrinate themselves with many irrational ideas which inhibit achievement. Rational Emotive theorists have found that negative self-concept, a high anxiety level, discouragement and poor relationships with parents are often interrelated with academic difficulties. Many children become 'trapped' in patterns of irrational thinking which result in self-defeating performance and behavior. A system of educating students whereby they are taught to carefully analyze their thoughts to see if they 'make sense,' would be a first step in teaching children to accept responsibility for their own academic success. Peters (1970) states that "the educational experience is not just a matter of insuring that children are well informed; it is more importantly a matter of converting what natural curiosity children have into a concern for truth or what is a fact"

(p. 197). Children can be taught to focus on the reality of fact or event and analyze it objectively. Very often, children exaggerate happenings out of all proportion never stopping to analyze whether their perception is in line with objective reality. Analyzing one's thoughts according to Maultsby's five rules for rational thinking can be the stepping stone enabling children to pursue academic and personal interests more in keeping with their abilities. Perfectionistic strivings along with 'demanding' kinds of self-talk suggest a dire need to achieve perfectly. Thoughts of this nature often result in students dropping out or giving up because they cannot attain their goals. Ellis, Moseley, and Wolfe (1975) point out that the need to achieve is probably the best road to underachievement. Children can be encouraged to see that while they prefer to achieve well, they do not need to achieve perfectly. The importance of teaching children that perfectionism is great—as long as it relates to performance and not to self is further stressed by Ellis, Moseley, and Wolfe (1975, p. 87).

Lower verbal IQ scores obtained from administration of the Lorge Thorndike Intelligence Test in grade three significantly correlated with higher scores on the C-I-I Inventory. While there was no research cited in this particular area, the author sought to determine whether there is in fact a relationship between a child's practice of irrational beliefs and verbal intelligence. The inherent fluency and/or richness of an individual's verbal facility may in some way allow the individual to more readily dispute irrational beliefs. Analogous thinking combined with wider verbal skills may allow individuals more opportunity to use verbal reasoning in

critically analyzing facts or events. On the other hand, an expansive verbal repertoire may lead to the creation and perpetuation of a wide array of nonsensical ideas. Luria (1966) and Vygotsky (1962) have demonstrated how language directs behavior. Providing children with a rational rhetoric should enable more rationally directed behavior. Hauck (1967) and Knaus (1974) have both pointed out that a child's vocabulary can be expanded to include rational terminology, which will be conducive to more rational behavior. Further study in this area however is required to ascertain the extent to which a rational vocabulary will enhance more 'reasonable' or rational behavior.

Children of families ranked as having lower socio-economic prestige (as designated by numerical values assigned to occupational categories on the Pineo-Porter Scale of Economic Prestige in Canada) scored significantly higher than those children whose families who were assigned higher socio-economic prestige values. Generally, those categories ranked most highly on the Pineo-Porter scale suggest not only greater prestige, but also an attainment of higher educational levels. Increased educational training and experience with a more critical type of thinking could possibly account for higher socio-economic prestige families instilling less irrational beliefs into their children's overall belief systems. Here again, further research is necessary to empirically test other variables which may play a role in contributing to lesser degrees of irrational thinking in families of higher socio-economic prestige.

Children from larger families tended to score higher on the

C-1-1 Inventory than did children of smaller sized families. The correlation, while significant, was low, and further research into the dynamics of family size and irrational thinking as well requires testing. More siblings within a family system may be conducive to the maintenance as well as perpetuation of irrational thinking. Children can readily indoctrinate each other with 'non-sense.' Children lacking skills in reasonable thinking are targets for believing many irrational attitudes or beliefs. Here again, there is a need for further, and more intensive study of this factor as it relates to the degree of irrational thinking in young children.

Finally, there is a significant correlation between a high level of irrational thinking and children residing in one parent families. The increase in numbers of one parent families has provided the impetus for wide spread study as to the effects on children reared without one or the other parent. Obtaining information regarding appropriate sex role behavior or what it means to be 'male' or 'female,' is one area that has been examined. Rational education aims to teach individuals that although they cannot change their past history, they can change how they now view past events. Children encountering a change in family status often exhibit negative or 'acting' out behaviors, because they feel a 'divorce' or 'separation' is causing their sorrow and it is 'awful.' Anger is often expressed by individuals who feel that their unhappiness is externally caused. Helping the individual to view situations according to what is factual will enable a better understanding of how and why divorce or separation occurred. Teaching individuals to be creative and flexible in difficult

circumstances also fosters more efficient problem solving.

Implications

The implication of this research is that the C-I-I Inventory can be effectively utilized in detecting children who practice a high level of irrational beliefs which could inhibit their academic performance, their behavior within the classroom setting, and their interpersonal functioning with teachers, parents or peers.

If the empirical evidence accumulated to date in support of the long term benefits of Rational Emotive Therapy is true, then this approach to helping people help themselves could have wide impact upon educational programming.

Implications for Counselling and Teaching

The results of this study could be regarded in light of the fact that (a) once alerted to those children who think irrationally, teachers or counsellors could involve children in rational re-education through one to one counseling or via group experiences; (b) Rational education within a group setting is particularly effective because other children can often see the self-defeating nature of someone else's beliefs and behavior before they can recognize irrational aspects of their own thoughts and actions. Constructive suggestions from one's peers often exert strong influences to make changes towards rational thoughts and behaviors; (c) teachers working from a rational-emotive or rational-behavior philosophy could establish a classroom

climate which fosters logical thinking based on fact and reason. Application of rational principles to various other aspects of the school curriculum (that is, social issues, rules and fair play in physical education, moral questions in English stories and the like), may lend further support to the educational program; (d) Research has also demonstrated that teachers who work from a rational philosophy, become less upset and are as a result are more effective in dealing with difficult situations within the school setting; (e) training programs for parents, wherein rational beliefs and attitudes are taught, would enable the reinforcement of the effects of rational education received by their children during school hours. Similarly, parents would have a means of modeling rational behavior for their children as well as maintaining their own emotional equilibrium; (f) If parents, teachers, counsellors, and children begin to function from a rational philosophy, we should see less emotional disturbance and more happy and satisfied human beings.

Limitation of the Study

While the results of the statistical analysis were significant, the correlations obtained were of a low to moderate nature. The large sample size (367) provided integrity to the study, however it must be remembered that many of the correlations fell within the .100 to .300 level. Further investigation with respect to the various hypotheses postulated might be considered in future studies.

Further Research

Further investigation of an abbreviated version of the C-1-I Inventory, beginning with items maintained in the 35-item form, may be an area for future research. The item analysis of the 49-item C-1-I Inventory indicates that 14 of the statements fell below the item total correlation level of .200, which is indicative of a 'poorly' discriminating item. It is interesting to note that of the fourteen items deleted, four statements represented Ellis' Irrational Belief Number 9 and three statements reflected Irrational Belief Number 3. Two questions might be raised. Are these items poor examples of Irrational Belief Number 9 and 3? Are all of Ellis' 11 Irrational Beliefs of equal importance, or are some of his Irrational Ideas more prevalent in our culture than others? A study of the pervasiveness of each of the 11 Irrational Beliefs might be of interest in refining or tailoring irrational ideas inventories for future use.

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APPENDICES

APPENDIX A

THE CHILDREN'S IRRATIONAL IDEAS (C-I-I) INVENTORY

The following is a copy of the 49-Item C-I-I Inventory created for use in this study.

C-1-1 INVENTORY

Name _____

School _____

Teacher _____

To the Student

The following inventory is not a test. There are no right or wrong answers to the statements. You are asked to respond to each question by circling the answer which is best for you. Your answers will be kept private.

Instructions for Marking Answers

Each statement will be read out loud and you are asked to follow along on your own copy circling which ever answer is best for you, according to what you think or feel. Think carefully before answering. Circle only one answer. Please do each item.

C-1-1 QUESTIONNAIRE

Name _____

School _____

Next to each question pick out the answer you think is best for you and circle it.

- | | | |
|---|-----|----|
| 1. Sometimes I feel that no one loves me. | YES | NO |
| 2. I worry that things might go wrong. | YES | NO |
| 3. I always forgive my enemies. | YES | NO |
| 4. My feelings are hurt easily. | YES | NO |
| 5. I worry about failing tests. | YES | NO |
| 6. I hardly ever worry about how I look. | YES | NO |
| 7. If I have to choose between important school work and fun, I usually choose fun. | YES | NO |
| 8. I worry that something awful is going to happen. | YES | NO |
| 9. I need to have someone with me when I get bad news. | YES | NO |
| 10. If my parents quit school, then it is O.K. for me to quit school too. | YES | NO |
| 11. I get very upset when someone criticizes me. | YES | NO |
| 12. If I get bad marks on a report card I just try harder next time. | YES | NO |
| 13. I worry about what happens when I die. | YES | NO |
| 14. If I can't do my school work the first time, I keep right on trying. | YES | NO |
| 15. I get very upset if my friends have troubles or problems. | YES | NO |
| 16. If a book says something, it has to be right. | YES | NO |
| 17. Some of my classmates are so unfriendly that I stay away from them. | YES | NO |
| 18. If I try hard enough I can be best at anything. | YES | NO |
| 19. I worry about my health. | YES | NO |
| 20. I waste a lot of time trying to get out of work. | YES | NO |
| 21. I get very upset when people don't seem to like me. | YES | NO |
| 22. I like to do my work without help from anyone. | YES | NO |
| 23. If I failed in the past, then I will fail in the future. | YES | NO |
| 24. I become very upset when I see or hear people fighting. | YES | NO |

- | | | |
|---|-----|----|
| 25. A good person is usually right. | YES | NO |
| 26. I never blame other people for my mistakes. | YES | NO |
| 27. I feel very bad when I can't do things well. | YES | NO |
| 28. I get terribly upset when people make fun of me. | YES | NO |
| 29. If I can't answer the teacher's questions, it means that I am stupid. | YES | NO |
| 30. The best way to teach a child right from wrong is to spank him when he is wrong. | YES | NO |
| 31. People are basically good. | YES | NO |
| 32. It is silly to worry about things I can't change. | YES | NO |
| 33. I get very upset when I make mistakes. | YES | NO |
| 34. You should always believe what your teacher tells you. | YES | NO |
| 35. I like to do things that other people think are right. | YES | NO |
| 36. I dislike work because I am lazy. | YES | NO |
| 37. A person who is angry or mad is a bad person. | YES | NO |
| 38. I always need to be told when I have done a good job. | YES | NO |
| 39. When I lose a race or get a bad mark in school, I get very upset. | YES | NO |
| 40. If you commit a crime when you are young, you will probably be a criminal when you grow up. | YES | NO |
| 41. I am troubled by thoughts of death. | YES | NO |
| 42. There are people who try to do me harm or hurt me. | YES | NO |
| 43. When playing games, winning is the most important thing to me. | YES | NO |
| 44. I need other people to help me make decisions. | YES | NO |
| 45. People who are not good in at least one thing are useless. | YES | NO |
| 46. If I have trouble learning to read it means that I am stupid. | YES | NO |
| 47. It is very important that everyone like me. | YES | NO |
| 48. I will always be good, because I am afraid of being punished. | YES | NO |
| 49. When somebody teases me, I think that people don't like me. | YES | NO |

HOW I FEEL ABOUT MYSELF:

Very Good

. Alright

Not Very Good

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APPENDIX B
SCORING FORMAT

The following is a copy of the scoring criteria for the
C-1-I Inventory.

SCORING CRITERIA FOR THE C-I-I INVENTORY

Items stated in a 'RATIONAL' context

Yes	No
0	1

Items stated in an 'IRRATIONAL' context

Yes	No
1	0

Total scores are obtained by summing the weights assigned to each item depending upon whether the subject responds 'rationally' or 'irrationally.' The range of possible scores on the C-I-I Inventory is from 0 to 49.

APPENDIX C
STUDENT PERSONAL DATA CHECKLIST
AND
TEACHER CHECKLIST FOR RATING STUDENT SOCIAL
AND EMOTIONAL BEHAVIOR IN THE CLASSROOM

**STUDENT PERSONAL DATA CHECKLIST AND TEACHER CHECKLIST
FOR RATING STUDENT SOCIAL AND EMOTIONAL BEHAVIOR IN THE CLASSROOM**

Name: _____ Age: _____
 Address: _____ Sex: _____
 School: _____ Teacher: _____
 Lives with mother & father _____ No. of brothers _____
 Lives with mother only _____ No. of sisters _____
 Lives with father only _____ Only child _____
 Other (foster child, etc.) _____

Please be as specific as possible:

Occupation of mother _____

Occupation of father _____

Large Thorndike I.Q. scores (Gr. 3) Verbal _____
 Non-verbal _____

Failed any grade, and if so which grade _____

Academic achievement in school to date could be described as:

Excellent _____

Above Average _____

Average _____

Below Average _____

Poor _____

SOCIAL AND EMOTIONAL BEHAVIOR OF THE CHILD

Please check any specific behaviors which describe the child.

Negative Behaviors

Anxious _____
 Easily frustrated _____
 Uncooperative _____
 Destructive _____
 Fights frequently _____
 Sullen _____
 Depressed _____
 Does not accept
 social responsibility _____
 Poor self-esteem _____
 Withdrawn, shy _____
 Unhappy _____
 Fearful _____
 Disruptive _____
 Defiant _____
 Not many friends _____

Positive Behaviors

Happy _____
 Well adjusted _____
 Good self image _____
 Helpful to others _____
 Shows initiative &
 independence _____
 Excellent classroom
 adaptation _____
 Pleasant _____
 Cooperative _____
 Plays well with peers _____

APPENDIX D
FREQUENCY DISTRIBUTION OF RATIONAL RESPONSES ON THE
49-ITEM C-1-1 INVENTORY

FREQUENCY DISTRIBUTION OF RATIONAL RESPONSES ON THE
49-ITEM C-1-I INVENTORY

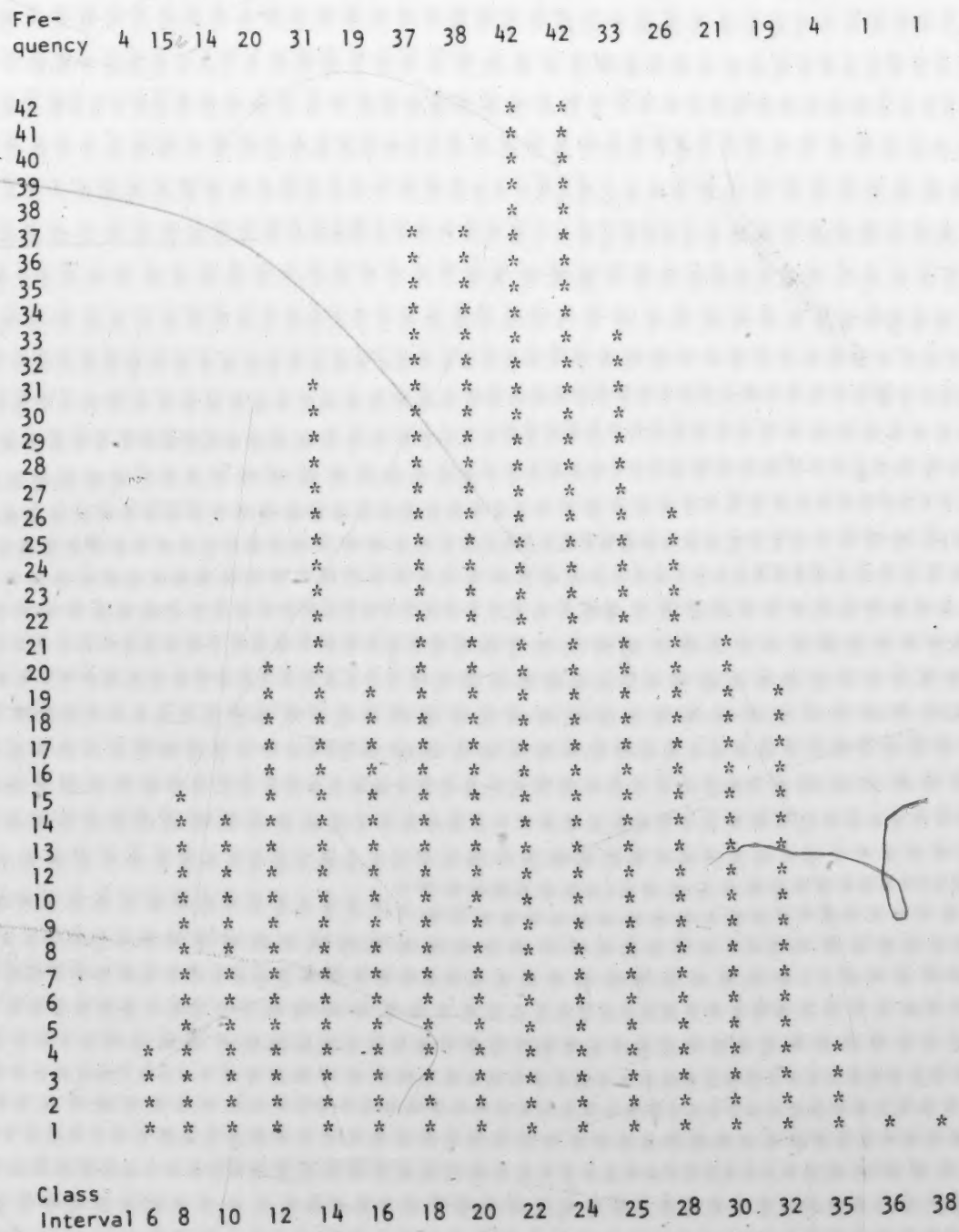
Score	Freq.	Z-Normal	%-ile	Cum-%
5	1	-2.998	0.14	0.27
6	3	-2.467	0.68	1.09
7	6	-2.074	1.91	2.72
8	9	-1.757	3.95	5.18
9	8	-1.533	6.27	7.36
10	6	-1.394	8.17	8.99
11	13	-1.239	10.76	12.53
12	7	-1.104	13.49	14.44
13	11	-0.997	15.94	17.44
14	20	-0.836	20.16	22.89
15	8	-0.707	23.98	25.07
16	11	-0.626	26.57	28.07
17	16	-0.517	30.25	32.43
18	21	-0.377	35.29	38.15
19	24	-0.216	41.42	44.69
20	14	-0.085	46.59	48.50
21	19	0.027	51.09	53.68
22	23	0.171	56.81	59.95
23	25	0.341	63.35	66.76
24	17	0.498	69.07	71.39
25	14	0.621	73.30	75.20
26	19	0.765	77.79	80.38
27	12	0.916	82.02	83.65
28	14	1.061	85.56	87.47
29	14	1.247	89.37	91.28
30	7	1.421	92.23	93.19
31	11	1.616	94.69	96.19
32	8	1.923	97.28	98.37
33	1	2.171	98.50	98.64
34	3	2.344	99.05	99.46
35	1	2.645	99.59	99.73
36	0	2.779	99.73	99.73
37	1	2.997	99.86	100.00

The cutting points between the three groups are 16.5 and 24.5.

APPENDIX E

HISTOGRAM OF RATIONAL RESPONSES ON THE 49-ITEM C-I-I INVENTORY

HISTOGRAM OF RATIONAL RESPONSES ON THE '49-ITEM C-1-1' INVENTORY



}
APPENDIX F
FREQUENCY DISTRIBUTION OF RATIONAL RESPONSES ON THE
35-ITEM C-1-1 INVENTORY

FREQUENCY DISTRIBUTION OF RATIONAL RESPONSES ON THE
35-ITEM C-1-I INVENTORY

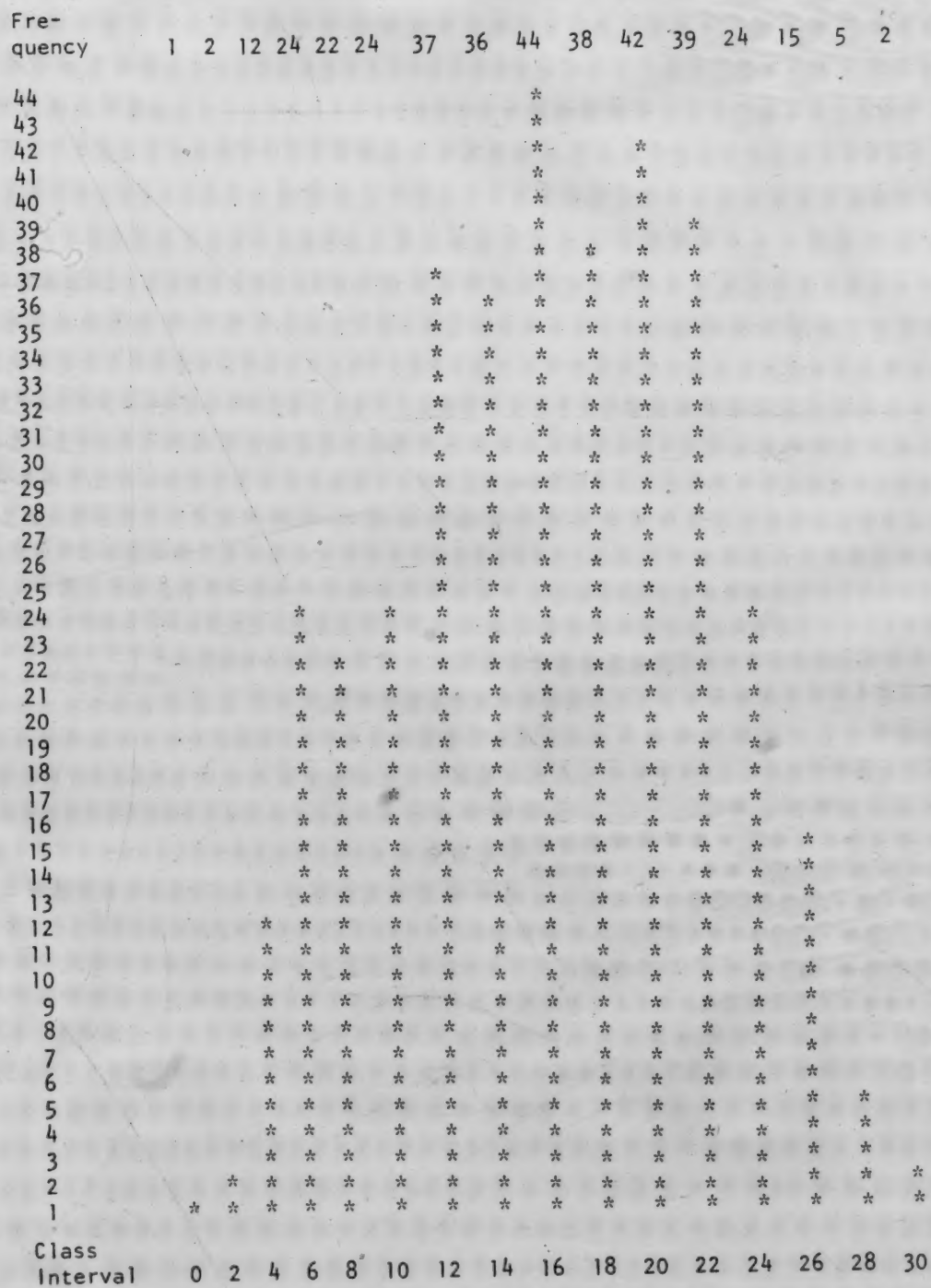
Score	Freq.	Z-Normal	%-ile	Cum-%
0	1	-2.998	0.14	0.27
1	1	-2.645	0.41	0.54
2	1	-2.467	0.68	0.82
3	5	-2.171	1.50	2.18
4	7	-1.862	3.13	4.09
5	9	-1.616	5.31	6.54
6	15	-1.367	8.58	10.63
7	12	-1.162	12.26	13.90
8	10	-1.025	15.26	16.62
9	12	-0.906	18.26	19.89
10	12	-0.788	21.53	23.16
11	11	-0.685	24.66	26.16
12	26	-0.533	29.70	33.24
13	20	-0.359	35.97	38.69
14	16	-0.230	40.87	43.05
15	20	-0.106	45.78	48.50
16	24	0.044	51.77	55.04
17	20	0.196	57.77	60.49
18	18	0.330	62.94	65.40
19	20	0.471	68.12	70.84
20	22	0.638	73.84	76.84
21	22	0.836	79.84	82.83
22	17	1.043	85.15	87.47
23	12	1.232	89.10	90.74
24	12	1.431	92.37	94.01
25	9	1.668	95.23	96.46
26	6	1.923	97.28	98.09
27	3	2.171	98.50	98.91
28	2	2.401	99.18	99.46
29	2	2.779	99.73	100.00

The cutting points between the three groups are 11.5 and 19.5.

APPENDIX G

HISTOGRAM OF RATIONAL RESPONSES ON THE 35-ITEM C-I-I INVENTORY

HISTOGRAM OF RATIONAL RESPONSES ON THE 35-ITEM C-I-I INVENTORY



APPENDIX H
CORRESPONDENCE



The University of Alberta
Edmonton, Alberta
T6G 2G5

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FACULTY OF EDUCATION CLINICAL SERVICES

Harvey W. Zingle
Co-ordinator

Counselling
John G. Paterson

Psychological Testing
Henry L. Janzen

Learning and Development
David Baine

Reading and Language
Grace Malicky

Speech
Jean P. McIntyre

October 14, 1976

Dr. Albert Ellis
Executive Director
Institute for Advanced Study in Rational Psychotherapy
45 East 65th Street, New York
N.Y. 10021

Dear Dr. Ellis,

I am writing to you at the suggestion of Dr. Harvey Zingle, my thesis advisor at the University of Alberta. For the past year I have worked with Dr. Zingle in the capacity of research assistant, and as a result of this experience became familiar with work being carried out with respect to Rational-Emotive Therapy. This field of study has interested me to the point where I have decided to do my Master's thesis on irrational beliefs as evident in elementary school-aged children.

At the moment I am constructing an Irrational Ideas Inventory applicable to the young child. Materials available in this specific area are scant and I am inquiring as to the possibility of obtaining research articles from your Institute. Dr. Zingle indicated that you had established a school in New York based upon the Rational-Emotive philosophy, however, he was uncertain as to whether it is still in operation. Would it be possible for you to send along information on the school, its goals and facilities? As you can see, I am in need of any materials which would help me begin study in this area.

We have also been trying to obtain copies of the Journal for Rational Living. None of our libraries carry this publication. I would, therefore, be very pleased if I could obtain as many of the back issues as are available. I am certain these journals would be of some assistance to my research.

Thank you for your kind attention.

Yours sincerely,

Marilyn Mallett
Marilyn Mallett



Institute for Advanced Study in Rational Psychotherapy

45 East 65th Street, New York, N.Y. 10021 / (212) LEhigh 5-0822

26 October 1976

Marilyn Mallett, Faculty, Education Clinical Services
The University of Alberta
Edmonton, Alberta
T6G 2G5

Dear Miss Mallett:

In response to your letter of October 14th, let me say that we did have a school for children up until last June but it is now temporarily in abeyance. Instead, we are trying to get educators to know the principles of rational-emotive therapy and rational living to write up materials which can be used in regular school systems. We found that teaching the children these principles in our own little school was not going very far, since we could only reach a few children so we are interested in developing written and recorded materials that will be able to be used by an average schoolteacher in various kinds of settings. The main material published on our school is the book by Dr. William Knaus, Rational Emotive Education. Another book of lesson plans based on the work that we did in our school will be published a few months from now by the Institute. These are the only published materials that we now have available.

I am having my secretary include in this letter information on our past issues of Rational Living and how you can obtain them from us.

Sincerely yours,

Albert Ellis, Ph.D., Executive Director

PROJECT SELF

PINELLAS COUNTY SCHOOLS

1015 - 10th Avenue North
St. Petersburg, Fla. 33705

Telephone (813) 822-8098



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April 18, 1977

Ms. Marilyn Mallett
58 Fairfax Crescent
St. Albert, Alberta
T8N 1Y1

Dear Marilyn:

To date, I am not aware of any scales that have been developed to assess irrational belief systems in children. My work to date, as the enclosed information will illustrate, has been primarily with high school students. There is strong evidence that irrational belief systems correlate with anxiety. Spielberger has developed an anxiety scale for children. Spielberger heads the clinical psychology program at the University of South Florida.

I hope this information helps you in your research endeavors.

Sincerely,

A handwritten signature in cursive script, appearing to read "George R. Ross".

George R. Ross
Evaluator

GRR/sr
Enclosures